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BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE
AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

December Meeting Papers on:

National Planning, Administrative Control, Pioneering Consumer Research, Hospital Management, the Twentieth Anniversary of the Taylor Society

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Objects of the Taylor Society Incorporated

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure—for the common benefit of the community, the worker, the manager and the employer—understanding and intelligent direction of the principles of administration and management which govern organized effort for accomplishing industrial and other social purposes.

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptations and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, the worker, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective responsibility.

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Membership in the Taylor Society may be either individual or firm. The following is a statement of membership classes. The fees and dues for members in other countries than the United States are one-half of those specified. The exception is the organized branch which is permitted to remit one-quarter of the regular fees for each of its individual or firm members. Application for membership should be made on a regular form which may be secured from the Society. New members may be elected directly to the grades marked.*

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All dues are payable in advance, either annually or in semi-annual instalments. The fiscal year is November 1 to October 31. Members elected other than at the beginning of the fiscal year are charged pro rata (quarterly) for the first year.

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Comment

THE VARIETY of articles in this and the preceding issue, reflecting the variety of papers at the December meeting, is an indication of the breadth of the Taylor Society's interests. National planning, general administrative control, manufacturers' merchandising, retail merchandising, production management and hospital management are among the subjects discussed. Observe, however, that there is unity in the midst of variety. All articles are concerned with management.

IN THIS connection the reader is requested to read the twentieth-anniversary dinner addresses of Mr. Kent and Mr. Person printed in this issue. Both consider questions of policy. According to Mr. Kent, the idea in the minds of the small group of founder members was that the Society would be concerned with exchange of experiences and promotion of research in the field of production management. Mr. Person's view is that any group organized to promote scientific management was destined by the nature of the objective to become as broad as the field of applicability of scientific management is broad; that at any time the interest of industry in scientific management is determined by the dominant managerial problems of the time; and that the Society's interests are best promoted by consideration of these problems in terms of scientific management.

WE BELIEVE it would be wholesome for the Society if its members were to express their views concerning this question of policy. Therefore, we invite letters as brief as full presentations of the correspondents' views permit. These will be published in the BULLETIN from time to time, without the correspondents' names. It will be interesting to discover whether members consider modification of present policy desirable enough to be stimulated to expressions of their views. Of course, there is a catch in the proposition: perhaps those who are stimulated to write will desire to preface such acts by careful reading of Copley's biography of Frederick Taylor, Taylor's "Shop Management" and "Testimony," Gantt's "Work, Wages and Profits" and "Organizing for Work," Dubreuil's "Robots or Men," and especially the Taylor Society's "Scientific Management in American Industry."

National Planning[1]

The View of a Merchandising Executive

By GROVER A. WHALEN
General Manager, John Wanamaker, New York

THIS subject seems innocent enough on its face and one that could be discussed after a review of one's experience. But unfortunately, this is not true—it is not simple. It is an involved subject and one that few speakers dare to discuss authoritatively. In this day courage is necessary, however, and it takes a good deal of courage to stand before the Taylor Society and make a contribution to this discussion. Any observation that I make tonight I hope you will take as coming from a humble executive in the business life of our community. It would not be fair to my auditors if I did not tell them that when I accepted this assignment to speak to you I did not realize that I should have to do a considerable research job to discover the various economic theories which have been advanced on the problems of depression and planning.

The discussion this evening is the result of circumstances in the nation growing out of the depression through which we are passing. The effects are many and with some, which I shall give, you are undoubtedly familiar; such as, involuntary unemployment, shortage of purchasing power, reduction in consumption, loss of trade, forced lowering of prices, business failures and bankruptcies, depreciation of securities, calling of loans by banks, lowering of wage scales, talk of higher taxes, fear, and the further problems created by one and all of these.

Now it seems to me that before any definite program is outlined as to what is the cure for the effects above stated, a study as to the cause or causes leading up to the depression and its effects is quite logical. I have looked to a number of economic writers for information and I wish to tell you of some of their theories for the cause of our present business situation. The books and papers I examined have advanced reasons for the causes, reviewed the effects and offered solutions for the prevention of possible future depressions. May I suggest the following books for light reading of an evening:

"The Way Out of Depression" by Herman F. Arandtz, A. M., Ph. D.

"Forecasting Business Cycles" by Warren M. Persons, Consulting Economist, New York, formerly Professor of Economics, Harvard University.

"A Program for America" by Will Durant, Author.

"The Work, Wealth and Happiness of Mankind" by H. G. Wells, Author and Historian.

"Business Adrift" by Wallace Brett Donham, Graduate School of Business Administration, George F. Baker Foundation, Harvard University.

"Successful Living in this Machine Age" by Edward A. Filene, Merchant.

"The Way to Recovery" by Sir George Paish (British), Authority on Political and Economic Matters.

"The World Economic Crisis" by Paul Einzig (French), Author.

I have also listened to radio addresses on the subject and yesterday read the comments of Mr. Charles E. Mitchell, Chairman of the Board of Directors of the National City Bank. From these studies I have selected some of these men's reasons, which I shall enumerate, for past and present depressions: (1) excessive speculation, (2) periodic crises (business cycles supposedly recurring each seven or eight years), (3) shortage in the output of gold, (4) necessity to return to the pre-war level, (5) general decline in the level of commodity prices, (6) under-consumption, (7) monetary causes, (8) moral factors, (9) coincidence of a number of independent factors, (10) general overproduction, (11) the machine age.

I am not going to comment on any of these except to select one of the causes, namely, the machine age. Looking back one hundred years for discussion on this subject, I find in the debate of Daniel Webster before the Congress of the United States on the Treasury Bill a most illuminating discussion on this subject. Mr. Webster made this observation:

> Man has found new allies and auxiliaries in the power of nature, and in the inventions of mechanism.
>
> The general doctrine of political economy is that wealth con-

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[1] Address delivered before a meeting of the Taylor Society, New York, December 4, 1931.

sists in whatever is useful or convenient to man, and that labor is the producing cause of all this wealth. This is very true. But then, what is labor? In the sense of political writers, and in common language, it means human industry; but in a philosophical view it may receive a much more comprehensive meaning. It is not in that view, human toil only; the mere action of sinews; but it is an active agency which, working upon the materials with which the world is supplied, brings forth products useful or convenient to man. The materials of wealth are in the earth, the seas, and in their natural and unaided productions. Labor obtains them, works upon them, and fashions them to human use. Now, it has been the object of scientific art, or of the application of science to art, to increase this human agency, to augment its power by creating millions of workers in the form of automatic machines, all to be diligently employed, and kept at work by the force of natural powers. To this end these natural powers, principally those of steam and falling water, are subsidized and taken into employment. Spinning machines, power looms, and all the mechanical devices, acting, among other operatives in the factories and workshops are but so many laborers. They are usually denominated *labor-saving machines* but it would be more just to call them *labor-doing* machines. They are made to be active agents, to have motions; and to produce effect, and though without intelligence they are guided by those laws of science which are exact and perfect, and they produce results, therefore, in general, more accurate than the human hand is capable of producing. When we look upon one of these we behold a mute fellow laborer of immense power, of mathematical exactness, and of ever-enduring and unwearied effort. And while he is thus a most skillful and productive laborer, he is a non-consumer, at least, beyond the wants of his mechanical being.

He is not clamorous for food, raiment, or shelter, and makes no demands for the expenses of education. The eating and drinking, the reading and writing and clothes-wearing world are benefited by the labors of these co-operatives in the same way as if Providence had provided for their service millions of beings, like ourselves in external appearance, able to labor and to toil, and yet requiring little or nothing for their own consumption or subsistence; or rather, as if God had created a race of giants, each of whom, demanding no more for his support and consumption than a common laborer, should yet be able to perform the work of a hundred.

My purpose in quoting Daniel Webster is to point out to you that the shadow of the *machine age* had already crossed the United States a hundred years ago. And it seems that in Mr. Webster's day, as today, there were just as many for as against the introduction of machinery. Machinery has been blamed for many things: unemployment, the lessened physical vigor of our people, the standardization of modern life. On the other hand we cannot deny the various benefits which come to us from machinery. These add to the interest and variety of modern life, with its splendid educational advantages and increased leisure. I do not propose to stress this phase of the subject we are discussing this evening except to impress upon you that it always has been controversial. Opinions have differed about it in the past and probably always will.

I have found the following to be some of the opinions of noted authorities on the prevention and cure of present and future depressions: involuntary unemployment insurance; the six-hour working day; the five-day week; further restriction on immigration by selection of silver as primary money with gold—bimetalism; compensated money; nothing possible to do; repeal of the prohibition law; control of production through supervision by government; maintenance of employment without cutting wages; appeals to the public to spend more money; abandonment of the system of private enterprise and the substitution of a communistic system; political action brought into line with economic necessity; closer co-operation between all sections of economic forces all over the world; development of a more scientific plan of production.

In a review of eight economic stabilization plans, the following excerpts have been extracted with the purpose in mind of either preventing or minimizing depressions and their effects on society. The methods of obtaining the desired preventions or cures for economic ills are:

1. *Swope Plan.* Trade Associations, membership in which is compulsory after three years for companies with fifty or more employes; rulings mandatory.

2. *U. S. Chamber of Commerce Plan.* National Economic Council; power not mandatory, but suggestive.

3. *American Federation of Labor Plan.* National Economic Council; power not mandatory, but suggestive; development of more scientific plan of production.

4. *"Forum" Plan (Jay Franklin).* "U. S. Incorporated"; 5 per cent of corporation and partnership control of stock of all business to be turned over to Government for five years; key industries to be grouped into regional or national monopolies; dividends to citizens later issued in form of consumption goods at cost.

5. *Stuart Chase's Plan.* "Peace Industries Board"; revival of War Industries Board for ten-year plan; seven members, using coercive, mandatory power; confined to twenty or thirty basic, necessary industries.

6. *Matthew Woll-James W. Gerard Plan for National Civic Federation.* "Business Congress" of all existing industrial organizations, in continuous session;

no limitations or restrictions; full and complete power, even to fix prices or combine; ten-year plan.

7. *Prof. Charles A. Beard's Plan.* "National Economic Council," authorized by Congress, to co-ordinate the highly concentrated industries in finance, operation, distribution, on the basis that business is public service enterprise. Also "Board of Strategy and Planning"; each industry governed by subsidiary syndicates.

8. *Associated General Contractors of America Plan.* Grant by Congress of greater power to Federal Reserve Board; bond issues to be authorized for Revolving Fund for specific construction and improvements; bond issues also for increasing public and semi-public construction; Federal Reserve to guarantee solvency of banks and force hoarded capital to circulate; public debt retirement to be deferred.

A review shows we are still without any unanimity of opinion on *national planning.* There are those of us in business who believe that the success of the modern manufacturing and commercial organization is due to intelligent planning. There is an old adage which can be applied to business with much success: "Plan your work and work your plan." Most industrial and business leaders believe in this theory as far as it affects their own industry or business. They have shown no desire, however, to go a step farther and apply it to the business and industry of the nation. *National planning* immediately assumes such gigantic proportions that the mind can scarcely comprehend the magnitude of such a task. Most of these same leaders believe in highly specialized organizations. They also believe that from our business experience many creative measures in planning may be adopted. Yet they are unwilling to tackle the bigger job of national planning with which we are now confronted. Early in the year, before the convention of the Advertising Federation of America, your speaker offered the observation that if *labor* could organize effectively in the United States *business* could do likewise, and recommended the formation of an American Federation of Business to parallel the American Federation of Labor.

At that time I did not go into any details with respect to the plan. For the purposes of our discussions this evening I make the following observation as to how such a plan could be formulated. The starting point for a national plan could be an organization representing the business and industrial interests of the nation, which might very properly be described as a National Economic Council of the American Federation of Business. Such a National Economic Council composed of outstanding leaders in industry and commerce would in the first instance be a *fact-finding authority.*

Its primary purpose would be to ascertain the fundamental factors underlying any industrial or commercial problems considered by it, such as the stabilization of a particular industry and its employment, and then, through the other phase of its work, to provide for the industry affected this authoritative information from which the official Trade Association for the industry concerned would be required by law to operate.

Let us take as an example a determination on the part of the National Council of the American Federation of Business that the nation's yearly consumption is estimated to be one billion units of a particular commodity. This conclusion could only have been arrived at by the National Economic Council after ascertaining all the basic facts underlying the production, consumption and markets affecting this particular commodity.

The National Economic Council's decision would be passed on to the official trade association of the industry which in turn would be required to work out its own problems through its members. The result of such a plan would eliminate flooding the market with a particular commodity in an amount that the people of the nation could not consume. It would definitely stabilize employment in the particular industry affected; it would eliminate destructive competition and economic waste.

The *fact findings* of the National Economic Council should be final and mandatory, and have the full force of governmental authority back of them. By this I do not mean that we need any more government in business than we have today. On the contrary, we need less. The commerce and industry of the country should be placed solidly in the hands of our business and industrial leaders with a minimum of governmental supervision. The plan proposed does not mean any further inroads on business by government, except where business itself finds the need of it. This method of operation would prevent flooded markets. It would be a scientific method of meeting the law of supply and demand. Our ways of meeting the inroads which this law makes on our industry today are most haphazard. Our only answer to it today is the survival of the fittest. The Economic Council of the American Federation of Business—call it what you will—could also authoritatively point out to the Congress of the United States the detrimental effect of the Sherman Anti-Trust Law on modern business. It could point out that modern business is functioning under the control of a vehicle constructed forty years ago to correct at that particular time the abuses that resulted from some special corporate privileges. Today that condition has been remedied through the medium of competition. But business is faced with the necessity of continuing practices which have been found unnecessary and harmful in modern business.

But our Congress cannot be expected to pick from the air a new vehicle which might more properly express modern business necessities. To whom should our law-makers look for expert advice? The suggestion which I make to you tonight is that *national planning* is possible. Perhaps the method I have sketched to you is not the right approach. But the great need of the moment is for our industrial and business leaders to meet and discuss seriously with the intention of correcting our business evils.

A final word. The Taylor Society, organized as an international group to promote the science and the art of administration and management, could make no finer contribution to our nation than to take the leadership in bringing about the adoption of a forward-looking *national industrial plan.*

MASS production, then, must engage in social planning.

All business has had to plan; but when the masses had almost no buying power, business men planned their business with reference to the market as it was. If the market was good, they increased production. If the market went wrong, they shut down. This made the market worse, but they didn't know that, and there seemed to be nothing that they could do about it anyway. Business had not yet become the way in which the masses got their living; they took chances with the market, and the market was supposed to be beyond anybody's control. Each business was a private matter. Social planning, if undertaken at all, must then have been undertaken by some social agency, particularly by the political government.

With the coming of scientific management, however, business had to do some different planning. Frederick Taylor and the other engineers who followed him pointed out the necessity of synchronizing the various departments of a factory so that each department, instead of merely making a record for itself, should work with reference to every other department. They called this planning "industrial co-ordination." It was, however, only a beginning. It increased production, and lowered production costs; but it was soon discovered that this was not particularly profitable unless more goods were sold. So business undertook to *plan sales,* instead of merely producing goods according to market demands.

The first sales plans, however, were not all that had been hoped for them. By adding to the sales force, by putting more dominant and more high-salaried experts in charge—in a word, by "high-pressure salesmanship"—it was soon found that sales could be expanded to meet the increased production. But the process was not always profitable; for while the cost of production might be lower than ever, the cost of *production and distribution* might be higher than before.

Such plans were not social plans, for they did not take society into consideration. They did not result immediately in mass production; for, while they sought to sell to the masses, they did not give the masses more than the masses might have got without all this new high-power management. Another way was eventually found, however, to increase sales and profits, too. That was to lower the price and thus to obtain more sales per unit of sales force. This was highly successful, and because it was successful, business could never be the same again.

Successful business then, whether it realized what it was doing or not, did engage in social planning. It was not likely to be called that. (Edward A. Filene, *Successful Living in This Machine Age,* Simon and Schuster, pages 271-272.)

Administrative Control[1]

As Illustrated by The Hills Brothers Company

By ROBERT J. DAVIS
Comptroller, The Hills Brothers Company, New York

Production Control

ABOUT ten years ago, I attended a number of meetings of the Taylor Society. At that time, we started to establish procedures for control and some of our work was prompted by those meetings. Possibly some of the methods we have evolved may be of assistance to you.

In 1920 and 1921 most of us found ourselves badly overstocked due to post-war inflation and The Hills Brothers Company was no exception to the rule. A central Purchasing Department was instituted and one of the first steps taken was the establishment of perpetual inventories. It is not necessary to show the detail of the system, as it is the standard form. We use bin cards with central control in some instances, while in some others bin cards are superfluous. Although we do not have as many articles to watch as some of you, nevertheless we have several thousand classifications. In conjunction with the perpetual inventory, we established maxima and minima quantities based upon time required for delivery, for use of the store clerk and Purchasing Department. This led to our first bar charts.

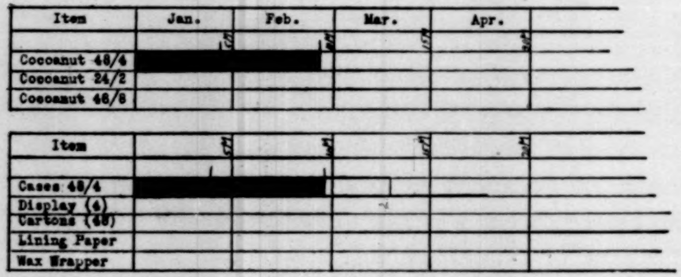

Chart 1

The filled-in bar showed the stock in terms of cases and weeks' production; the double line designated supplies en route and the single line showed additional orders already placed.

We next developed a line chart, showing dollar value of supplies by department and total. We laid this out a year in advance and have continued to control the money tied up in inventory by this method.

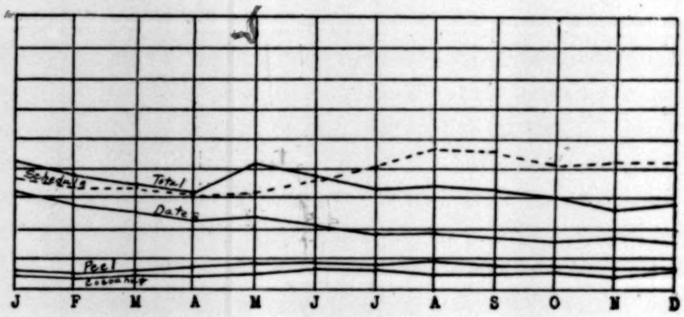

Chart 2

In order that you may better understand our problems of control, you should know the products we manufacture and distribute. Our best-known product is Dromedary Dates. We import dates from our cherdaigh in Iraq at the head of the Persian Gulf. These are reselected, packed and pasteurized in our Brooklyn plant. We bring in from Italy, Greece and Sicily citron, orange and lemon peel which are preserved and sold in bulk or sliced and sold in packages. Cocoanuts are brought from the islands of the Caribbean to Brooklyn, where the meat is extracted and packed either in Dromedary packages, in small cans or in large tin cans or barrels. Our newest item is Dromedary Cranberry Sauce. Cranberries are brought from Cape Cod, crushed, strained, mixed with sugar and made into cranberry sauce. All of these products are packed in Brooklyn and are heavy sellers in the fall, which, as you can readily see, complicates our picture.

Our efforts have been directed to securing products which would sell in other seasons than the fall. A comparatively new line is Canned Grapefruit, which is packed in five plants in Florida and one in Porto Rico. This product sells in quantity the year 'round. We also have a cannery in Georgia, where we put up Red Pimientos—again a product which sells well throughout the year.

Back in 1880, 1890, 1900, we were at one time or another the onion kings, or the bean barons, or the lemon lords, but we have not done anything in this line for years. In connection with our grapefruit canning operations, we are returning to the fresh fruit battlefield and are selling fresh grapefruit, oranges and pineapple, some of which we grow in Florida but most of which comes from our own properties in Porto Rico.

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[1] Paper presented before a meeting of the Taylor Society, New York, December 2, 1931.

Having given you this background, I should like to proceed more or less chronologically with the development of our control system.

In 1921 there was constant friction between the Purchasing Department and our Cocoanut Department. Production was gauged by stocks on hand in New York so that either the packing was proceeding under pressure or else the department was shut down for lack of orders. Inasmuch as cocoanuts are a perishable product and take one month to purchase and deliver, our buying department either had too many cocoanuts on hand or too few. When production stopped suddenly, as it did, nuts would pile up; if production started up suddenly, there was a scramble to buy cocoanuts. In those days there were practically no spot stocks available, which situation also has been remedied.

We plotted our sales for several years back by months and found a very consistent sales curve, like this:

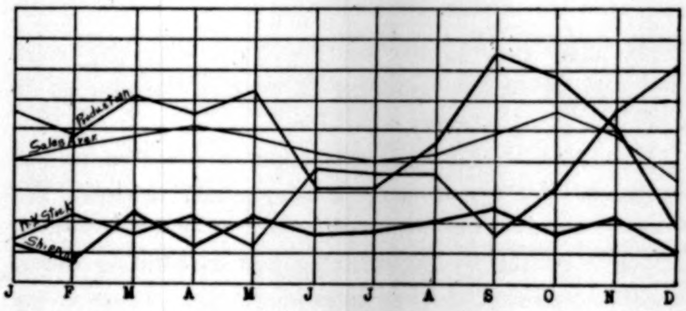

Chart 3

We plotted New York stocks and got the stock line on Chart 3. We then examined our shipping curve, which included both actual sales and consignments, and got the line so marked on the chart. It was then very obvious that stocks throughout the country needed more supervision and that a production schedule plotted a year in advance was a possibility. It was also evident that total stocks throughout the country were the only useful check—that New York stocks were worthless for that purpose. We, consequently, built up a sales schedule, then a stock schedule and then tried to fit a production schedule in between. We were, of course, confronted with a problem of personnel at the plant and made certain concessions in our stock line to meet that situation. We then got the following chart:

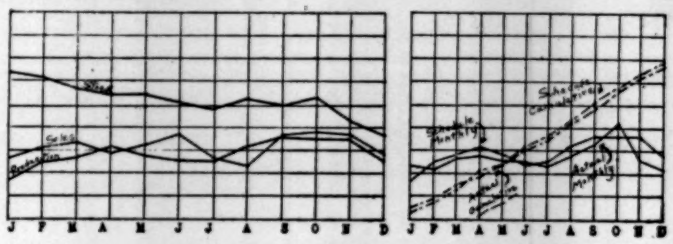

Chart 4

This problem was the simplest to solve as our sales, although heavier in the fall, were fairly large during the balance of the year.

Our date schedule was much more difficult. Our sales chart looks like this:

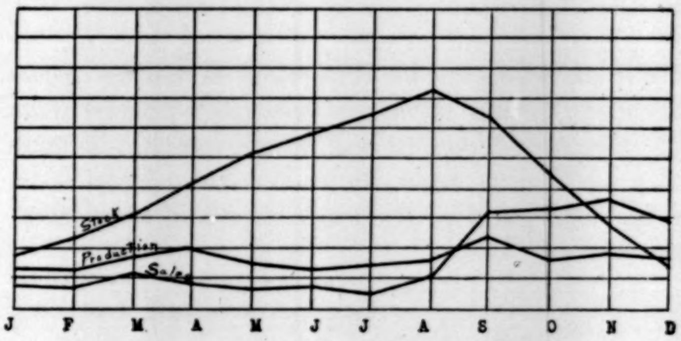

Chart 5

In order to regularize we had to construct the production schedule shown on the chart. This gave a stock line with a tremendous peak in August. As you can readily see, an entirely different method of check was required here than was the case with cocoanut. Monthly sales in the former had a direct bearing on the situation which could be remedied promptly. In this latter instance we have to be guided entirely by percentage relationships examined each month. Inasmuch as one weak month or one strong month can distort the picture badly, great caution must be used before taking action. We have, however, had only one disastrous experience. In 1926 everything went according to schedule until the first of October. During that month there was a heavy influx of cheap dates and our sales skidded badly. We were caught with a large stock and could remedy the situation only by cutting our production practically to zero for five or six weeks. With that exception, we have had no serious adjustments to make.

Please do not think that we set a schedule on

January 1 and then go along on that basis. We are compensating one way or another fairly frequently. We have enough confidence in our schedules to abide by them until a condition can be diagnosed as permanent or temporary. On the other hand, when the occasion demands, we (to paraphrase the famous saying about surgical operations) do not permit the system to be a success and let the patient die.

The following incident shows that ideas of permanency are not always the same. Until fairly recently, our offices had always been located in the center of the fruit district. We had a warehouse in the same building and employed a number of porters to handle the products stored there. One of these, an old Italian, had been with the company since its formation, over fifty years before. A couple of years ago we discontinued the warehouse and moved our office into a modern office building outside of the fruit section. We, of course, planned to take Julius down with us, but I did not appreciate the importance of talking to him about it. He was apparently very much worried about his future and said to one of our people, "I think they will fire me when we go downtown. And when I took this job fifty years ago, they said it would be permanent."

We establish permanent schedules and are on our guard against making hurried changes which may necessitate a compensating adjustment later on. We have done a great deal to regularize employment. Mr. Ernest G. Draper, Vice-President of The Hills Brothers Company, as co-author of the book "Can Business Prevent Unemployment?" has described our progress in this direction very fully. In 1919 we had a force of one hundred workers at our Brooklyn plant for nine months of the year and of twelve hundred workers for three months. We now average three hundred regular workers throughout the year and these permanent employes average 80 per cent of the total payroll. In our fall season, which is our peak season, that ratio only drops to 70 per cent.

We very frankly have been unable, after six or seven years of work, to regularize our Citron Department and are going to give up the attempt this coming year. We do not sell one case of this product between January 1 and September 1 and, therefore, have absolutely no check on a schedule. We plan to work out a production chart which will call for manufacture during the latter part of the year only.

Having given you a general idea of the type of business we have, let me now progress to the routine of control. On the first of each month a preliminary report is put together. The figures are not absolutely correct, but they vary so little from the final figures, which are ready by the twelfth, as to permit us to make plans based on them. Stocks are arithmetically arrived at by subtracting production from sales, or vice versa, and approximating stock increase or decrease. These figures are for products as a whole. We do not break down according to size except when special information is required.

On the twelfth, final figures are available in two forms: (1) charts, such as I have shown here, and (2) comparative tabulations which show the monthly record compared with the same month of the previous year and a cumulative figure for the year to date.

We have found a weekly stock report by consignment points very helpful. We draw these up to fit the occasion, however. We eliminate them in unimportant periods and start them again when necessary. These reports show total future orders, withdrawals against these contracts and existing stocks.

Sales do not move evenly enough to allow us to rely entirely upon monthly check-up. We have a daily sales report which again shows products by groups. It is not necessary to break down these figures by size and variety. We also have daily manufacturing reports. At the moment we are watching our cranberry sales very closely as they come over the order desk, so as to manufacture in such a fashion as to have the proper sizes available.

We think the foregoing system is effective in our business. We try to keep it simple and flexible. We have eliminated countless repetitive or useless reports and are constantly scrutinizing our routine to determine its value and prevent lost motion. In fact, we have a department which, for want of a better name, is called New Systems and Office Routine. This is entirely separate from the position of Office Manager and therefore permits impersonal investigatory work which does not conflict with the day-to-day running of the office.

I could give numerous examples of reports which were carefully prepared and never looked at, much less ever used; reports which one executive did not use but passed on to another who did the same thing. Control methods are a means to a goal and not the goal itself. I showed you the bar chart we used in the Purchasing Department. It has long since been superseded by a visible index system for each item. This gives more information, is simpler and takes less time to carry on. I find that I use my charts for reference work while I use the tabulated figure for direct control. These charts, however, have done their work in educating us to see conditions as they were and how they could be remedied.

May I summarize in outline form the principles for the co-ordination of sales, production and stock:

1. Forecasting of sales and production a year in advance. This may sometimes seem absolutely futile, but I am convinced that planning of this kind, although it may fall down in many instances, will tend to stabilize your sales, manufacturing and personnel policies.
2. Periodic check-up, possibly at monthly intervals.
3. Daily reports which make possible prompt decision and consequent action.
4. Simple and usable control figures. Do not make reports for the sake of making them. I can recall being stopped, fortunately a number of years ago, by one of the girls in the office who said, "Mr. Davis, won't you please look at this report? No one has looked at it for two years and I'd just like to have some one see it."

Cost Control

At our company party last year, after a very fitting speech, our factory employes presented me with the emblem of my office, a chisel. I am the budgeting officer. Budgets have been one of our most effective methods of controlling costs. These are established once a year, but again, as with our schedules, are subject to change.

	July Budget	July Actual	Budget thru July	Actual thru July
Accounting Department				
Traffic Department				
Stenographic Dept.				

Figure 6

Most of these are very simple. Sales, advertising, office management, administration use the standard form.

Some of these start on January 1, some on July 1 and one on September 1. We do not like to split up the natural year in budgeting, although our books follow the calendar year, January 1-December 31.

We found it necessary, however, to expand our production budgets. In addition to the above information, which is in dollars, we show budgeted production as compared with performance. The next step, however, was the most helpful of all. We established unit costs per case for each product by size, divided into Direct Expense, Indirect Expense and Burden. Against these were set up each month the actual unit cost and the accumulative unit cost.

PRODUCTION			BUDGET			ACTUAL		
Budget	Actual		Direct	Indir.	Burden	Direct	Indir.	Burden
		Dromedary Dates 36/10						
		Dromedary Dates Pitted						
		Dromedary Dates 48/2						
		Monogram Dates						

Figure 7

Of course, this seems very obvious and so necessary as to make reference to it an insult to your intelligence. You all do this in some form or other. We use the standard unit-cost card system in our accounting. Inasmuch as our budget figures tie in with the individual cost cards, if our budgets stay in line our profit will be maintained.

One of the most important accounts to be watched is that famous military party, General Expense and his brother, Miscellaneous Expense. Care in allocating expense to the proper heading will reduce to a minimum this catch-all which covers a multitude of sins.

Budgeting is intelligent planning. It is a guide like a Socony Road Map, only sometimes not as accurate. It shows you just where you are at all times and also shows you where you are going. Budgets should not be used as a depressing factor, preventing necessary flexibility, but should be, as I have said before, a control.

An outline summary of my second division, the control of costs, follows:

1. Budgets
2. Unit costs
3. Tie-up with general accounts

Control of Quality

The control of quality, of course, ties in very directly with the preceding sub-divisions, but you may be interested in our methods. Let me give you an example, again in the Cocoanut Department.

Cocoanuts from the island of Porto Rico are very different from those which come from Jamaica and Trinidad. Although the quality of meat is in general the same, the yield, or what you may call rendement, varies considerably. It is practically impossible for us to weigh all the cocoanut meat which we produce. We, therefore, make test runs periodically, on each variety separately. If these figures check in general with the predetermined estimates which we have built up over a period of years, nothing further is done. If we find they are running above or below our standard, we engage in further check-up. This is very important, as the price, of course, fluctuates with each variety, whereas we are interested only in the cost per pound of finished meat.

The daily reports, of course, show a combination of the various types of cocoanuts which we have on hand. We substitute the theoretical raw-meat value of cocoanuts used on a percentage basis and compare this with the actual value. This is done daily. At the end of each month our cost figures are taken off and these figures are again carefully scrutinized to be sure that we are buying the varieties which will give the lowest cost in the finished merchandise. Bad cocoanuts are reported and very closely checked. This control has, of course, saved us a good deal of money.

The system we follow in packing dates is slightly different, due to the nature of the raw material. Here again we make certain preliminary tests, which in turn are followed up by monthly figures. If the results secured are in line with the original tests, nothing further is done. If they do not coincide, we investigate further.

In producing citron, lemon and orange peel we have a very much more complex problem, inasmuch as it takes several weeks to preserve with many syrups used in the process. However, we establish a certain standard and at the end of each month make comparisons. We have found, in this particular instance, that one of the guiding points is the inventory, not of raw material, as might be expected, but of the preserving syrups. This, as you can readily understand, is very difficult. These syrups change during the course of the process so that you cannot check daily to see how much 80, 70, 60 or 50 per cent syrup you have. You can do such work only periodically.

We have certain standards for our Dromedary grades. In addition to a check by each production unit to see that the grade is lived up to, samples are regularly taken from cars as they are being shipped and sent in to our main office for checking.

It is very difficult to lay down any set rules for quality control. It varies with every product and every company. It is, however, most essential, though more difficult in businesses such as the steel business than in ours. We, of course, have a laboratory that makes routine examinations for quality, but our products cannot be controlled entirely by laboratory analysis. Our control has to be right on the floor.

May I express my appreciation of the honor you have done our company in asking me to tell you the system which we employ for administrative control. Although relatively large in our field, we are a small company. We try, however, to be progressive and at the same time to keep our control records in as simple a form as the volume of our business necessitates.

Discussion

Alden C. Brett.[2] I am very glad to have this opportunity to discuss Mr. Davis' paper with you, not because I know anything about Mr. Davis' business, but because I believe that the *principles* of control are the same for The Hills Brothers Company, the Hood Rubber Company, or any other organization. It is, therefore, these principles I want to discuss with you for a few minutes because, if we are to take anything worth while away from this meeting, it will be a better understanding of principles and not a knowledge of routine.

I want to give you my definitions of these principles, to try them out on you and then test Mr. Davis' operations against them; or perhaps I might better say, test my principles against what Mr. Davis has found it advantageous to do.

These principles in my own thinking I summarize under five headings:

To control you must *first* know the facts about your business. This means:

1. You must know the facts concerning current operations, reports, balance sheets, profit-and-loss statements, ratio statements, statements of cash position, etc. These all tell you what you are doing or what your position is at any particular time.

2. You must know the facts about the field in which you operate. This involves commercial research, knowledge of the potential demand for your product, who your customers are, where they are located, and how they can best be reached.

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[2] Comptroller, Hood Rubber Co., Inc., Watertown, Mass

3. You must know a good deal about the outside forces which affect your business: its status in general industry, whether in a growing or declining field; its relation to supplementary products, substitutes; its relation to the whims of fashion, the condition of the weather, and matters of a similar kind. Some of this knowledge is general, but most of it is special to your own business; and it is all of vital importance to you.

4. You must know the relation of your own business to competition, what proportion of the market you serve, the names and character of your competitors, where they are strong and where they are weak, whether they are co-operative or whether they are antagonistic. You must know a good deal about your industrial trade association, if you have one, and to what extent it can be used as a method of furthering your business aims.

5. You must know all there is to know about your product; not only about your own product but about allied products. And when I say "you," I do not mean that you as the administrative head must necessarily know all these things, but you must have this knowledge readily available to you in your own organization.

All this comes under the first major thought of knowing the facts about your business.

The *second* principle is this: To control you must have a plan; you must know where you want to go, when you want to go, and how you expect to get there. This means a budget. And I think Mr. Davis has brought out very clearly in his paper the need for a budget and the advantages and gains in his own organization through the use of it. In our own company the budget is one of our most valuable tools. I will speak of it in some detail later.

The *third* principle is this: You must develop standards. I differentiate between the budget and standards, although they are closely related to one another. In fact, standards are absolutely dependent on the budget. They are the parts which make up the whole. Standards are the operating tools of control. When we say standards we usually think of standard manufacturing costs, as these are the best known. We must have, however, many others; such as sales standards or quotas; standards for distribution expenses; standards for wage payment; financial standards, etc. As a general rule, standards must be realizable; standards must also be flexible so that all factors beyond a foreman's or executive's control are eliminated and his standard represents only those things which he can do something about. At Hood we operate largely on a flexible budget for the principles of which we are indebted to John Williams. I look on him as the originator of the plan of flexible budgeting, and I know that any progress *we* have made in that direction has been on account of the ideas left with us in 1921 when he worked with us for a considerable time on the budgeting of our Distribution Department.

This is the *fourth* major principle: You must develop simplicity in your plan of control so that it will work. One of our greatest authorities on the science of management has said, "When you find it, it will be simple," and I believe we can test all our plans by this truth. After we have perfected our means of control, if it has not been boiled down to a series of comparatively simple and readily understandable operations it will not bear the test of time. If you will consider your own experience you will find that many of your plans, right in principle, and based, perhaps, on a considerable amount of research and investigation, have failed because you have not been able to make them simple in application.

The *fifth* consideration of major importance in administrative control is this: You must develop in your personnel the ability to understand the methods set up and to operate the systems you have devised. *They* must be able to develop the plan and keep it alive, and this involves a knowledge of the principles underlying it. In the final analysis, you control your business only through the individuals who do the work. All your thinking about your problems must be in terms of people. That is why our accounts are set up by responsibilities and reports are rendered showing the results of the operations controlled by a single person. This is another principle we learned from John Williams.

These, then, are my five principles of control and I will repeat them in a few words:

1. Know the facts.
2. Have a plan.
3. Set up standards.
4. Make it simple.
5. Find the right people.

Let us see whether or not we have the counterpart of each of these in Mr. Davis' plan of control. To start with Principle 1: Does he know the facts concerning his business?

In the first part of his talk he has shown us a set of very excellent charts. The first was a bar chart of stock on hand; the second, a line chart showing dollar value of supplies; the third, a sales curve developed from past experience with a comparative stock line. These give him a good historical background as well as the comparative current condition of his operations. He has shown us how he developed the monthly incidence of his business and applied this to his sales, production and stock schedules.

In our own business we have a set of charts strikingly similar to those used by Mr. Davis. In the rubber-footwear business we, too, have a problem of unbalanced seasonal distribution. Fifty per cent of our sales are made normally in the last quarter of the year. We also have problems of style and weather, but we have not yet learned how to forecast these with any degree of accuracy so as to be able to include them with assurance in our schedules. We must simply work on trends and averages.

One thing which Mr. Davis has not stressed, which we find absolutely essential, is knowledge concerning our industry as a whole and our relative position in it. We try to answer such questions as these: Do general business conditions, the condition of dealers' stocks, style trends, etc., indicate that we shall have a $100,000,000 industry total or $75,000,000 this year? Are certain sales outlets for the industry increasing in importance and others diminishing? Are we maintaining our relative position in the industry? These are questions of importance to us.

The matter of reports, the methods by which information is passed on to the executives, tie in closely with the question of budgets and standards as we always show current results compared with our previous judgment of what they should have been. I will accordingly pass to the second principle.

Mr. Davis undoubtedly has a plan. In fact, he goes so far as to state that he is the budgeting officer, which to me is a rather startling admission. I had the idea that after the rather trying experiences of the past year budget officers as a class had taken to cover for the time being at least.

In connection with budgeting, I want to mention three matters which I consider of importance (though a little off the regular line). One is the necessity of securing the active co-operation of department heads in the setting up and operation of the budget. Nothing stimulates interest on the part of the foreman so much as the practice of making him an active party to the formation of the budget. It makes him appraise his own job and consider his own standards. You probably will have to give him a considerable amount of help and guidance the first time he does this, but the ultimate results will be good. Your organization must be "budget minded" if you are to get the most out of it.

A second important characteristic of an effective budget, I believe, is this: It must be flexible. It must furnish an exact measure of the accomplishment of the operator under the conditions which actually did exist. You know we set up standard-cost schedules in three columns: Standard at Standard Volume, Standard at Actual Volume, and Actual at Actual Volume. Our budget in itself must take the step from this first column to the second and give us a standard of comparison at the actual volume which was obtained. In other words, the volume variance must be eliminated before it goes on the individual report sheet, so that the variance which remains is caused by operating efficiency only and is a measure of the ability of the individual in charge.

In the Hood Rubber Company we have a simple method of determining the variable factors in any operation and from them the budget standard for any volume. I will try to state it in words. The variance in estimated expenses at a high and a low volume level divided by the difference between these volumes gives a variable expense ratio which when applied to either of these volumes gives us the amount of variable expense at that volume, and, of course, by deduction, the amount of fixed expense. If we assume, and I believe it is practical to do so, that this fixed expense will remain the same for any volume between these two limits, it is very easy to compute the budget standard for any such volume by adding to this fixed amount the proper variable amount computed by using this variable ratio and the volume taken. This is a rather involved statement of a simple mathematical procedure.

There is a *third* necessity in budgeting and that is the co-ordination of all phases and the development of the proper complementary results. These are the cash budget, the plant and fixed-assets budget and the balance-sheet forecasts. These we develop on a monthly basis at Hood. I should like to have Mr. Davis tell us later whether or not he ties these in with his budgeting.

Mr. Davis speaks of budget revisions and says that, "As with our schedules, they are subject to change." It has been my thought that we should always keep our original budget in mind. It is a course we have charted and we know that if we sail the ship of business exactly on that course we shall arrive at a predetermined point, representing a definite profit or even, perhaps, for the year 1932, a loss.

As our ship veers from its course, we must make changes in our reckoning and we know that unless we change our direction we shall arrive at a different ultimate destination. Thus we prepare each month a revised forecast based on the actual operating results to date, but we always keep the original annual budget in mind.

My *third* major principle is covered by Mr. Davis as follows: "The next step, however, was the most helpful of all. We established unit costs per case for each product by size, divided into Direct Expense, Indirect Expense and Burden. Against these were set up each month the actual unit costs." Unless I misunderstand Mr. Davis this means that he operates a standard-cost system, and if he has these standards set on commercial as well as factory expenses, I venture to say that he is a step ahead of most of us. I hope he will tell us later whether or not this is so.

The next step I want to take in my own company is the development of unit standard costs for our distribution activities. We have already done considerable work on it.

Standard costs for distribution involve more difficulties than the set-up of standards in the factory. In manufacturing we have usually but one factory through which all products pass. In distribution we have this same variety of products passing out through a number of different distribution channels. Thus we must have a different standard distribution cost for product A through jobbers, through export outlets, through branches, through direct selling, and through company-owned retail outlets. All this multiplies detail but does not make the problem incapable of solution.

When I say, therefore, "Set standards," I mean standards covering the whole range of production and distribution activities. I know that this can and will be done.

My next principle is *"Make it simple,"* and Mr. Davis has also stressed this by saying: "Control figures should be simple." From his presentation of his system I should say that he has attained that desirable result. More good ideas have been wrecked on the reef of complexity than from any other cause. I need not spend more time on this, except to lend emphasis to this thought which I know is important.

My last principle is *"Find the right people"* so that your system of control will function and develop. The necessity for this is self-evident.

The principles of control which have been so well illustrated by Mr. Davis in his description of the systems in operation in The Hills Brothers Company, and which I have attempted to put into words, apply to the work of all persons in an administrative capacity and, of course, especially to the work of the chief executive. His effectiveness can be rated directly on his ability to control.

I once worked under a general manager who believed very thoroughly in the value of testing and rating his personnel. All persons on the salary roll were rated. We had psychological tests, we supplied the missing words in incomplete sentences, we fitted blocks together, and we answered all sorts of trick questions. I have often thought in the course of this experience, "How *I* would like to rate the boss." Right then I should probably have placed a whole lot of weight on his personal characteristics, but if I were doing the job today, I should rate him on his ability to control and the methods he uses to that end. The questions I would ask myself would be something like these:

Does he know the facts concerning his business?

Does he have proper operating reports?

Does he take an active interest in research, especially commercial research?

Does he know his product and his customers and his industry?

Does he know and properly value his competitors?

Does he understand and use budgetary control?

Has he insisted that proper standards be set throughout the operations of his company?

Has he simplified his operations or is he tied up in routine?

Has he developed the proper personnel to carry on the functions of control?

In other words, I should test him by an application of the principles of control that I have tried to put into words for you.

In closing, there is just one more thought I should like to suggest to you. I want to carry this thought of control beyond the control of a single business, even beyond the control of an industry. If we are to prevent periodic recurrences of periods of depression and distress similar to this one through which we are passing, perhaps even if we are to endure as a nation, we must develop the ability to control, not only our industries as units or in their functional groups. We must develop a co-ordinated control of these *groups* as a part of our national economy.

And I venture to predict that when that control has been perfected we shall find in operation the same *principles* that we are now developing in The Hills Brothers Company or the Hood Rubber Company.

We must know the facts.

We must have a plan.

We must use standards.

We must simplify the operation of our plan so that it can be worked.

We must find the right persons to operate.

This job cannot be done by individuals. It demands co-operative, co-ordinated work, and I know of no organization better fitted to lay the foundation, to develop facts, to evolve a plan, to set standards, and to reduce the problem to simple terms, than the Taylor Society. I am glad to see that later in your program you are to devote a session to this subject.

All of this grew out of a discussion of Administrative Control. I hope you will pardon the liberties I have taken and I thank you for the opportunity to be with you.

Arthur E. Cameron.[3] Mr. Davis has given us a brief but comprehensive statement of the methods of The Hills Brothers Company, in controlling production and inventory. With all due respect to Mr. Davis' associates, we cannot but feel that the proper symbol for the office of comptroller is that of a searchlight—a forward-looking searchlight—rather than a chisel. A chisel may be a necessary corollary but without the floodlight of facts it would be worse than useless, even dangerous. The procedure as described appears to be based on the intelligent use of records as a tool in planning purchases and shop operations.

The importance of continued analysis of all the facts bearing upon sales and production schedules cannot be stressed too strongly. A change in the buying habits of the public—a change from the purchase of a prepared product to the preparation of that article at home—will have far-reaching effects upon the sales curve. At the present time, for example, canned goods manufacturers are suffering and preserve jar manufacturers are rejoicing because the low price of fruit has revived home canning.

A business built upon distribution of its product to large wholesale users such as bakers, canners, confectionery manufacturers, may suddenly find that the public is now buying the same product prepared and distributed through different channels. Propaganda for or against the use of certain foods reacts quickly on sales. There is need of a sixth sense in correlating such changes, actual or impending, to projective activities.

In the food industry there is always the problem of spoilage which destroys profits. In this era of ever-falling commodity prices and a more than corresponding decline in the volume of purchases, this problem of spoilage is intensified. Mr. Davis has intimated that this budget and production schedule are subject to frequent corrections. It might be of interest to know some of the factors that guide The Hills Brothers Company management in determining how far previous trends and experience should be disregarded.

W. H. Leffingwell.[4] The problem of control, as Mr. Davis pointed out, is one of thinking and planning. A particular system is not important.

I recently ran across a sales manager who had records showing exactly what each customer of his company had bought for two years. When I asked him what value the record had, all he could tell me was that he "looked at it every once in awhile." When I asked him what his average sale per customer was he could not tell me. He said he would consider a customer who bought $1,000 worth of his product a good customer; one who bought only $100 not a customer at all. I then took one of his records, counted out five hundred customers, and pointed out to him that 52 per cent of them bought less than $100 a year. He claimed that if I had picked Pennsylvania instead of Montana the figure would have been quite different. And it was. I picked out Pennsylvania and the figure was 54 per cent.

H. S. Person.[5] Mr. Brett pointed out that our program begins with a session on administrative control in an individual plant and ends with a discussion of administrative control on a collective plane. This was not entirely an accident.

It is my opinion that industry has reached a stage of complexity and resulting disorganization that requires at least some inquiry into the possibility of a collective budgeting of industry if it is to operate for the social good. Control began in the production department, spread to the factory and then, under the compulsion of a buyer's market, to merchandising and selling. Almost simultaneously responsibility thrown upon the general executive resulted in the enlargement of the general technique of control to take in the administration of the whole enterprise.

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[3] Comptroller, Pie Bakeries of America, Newark, N. J.

[4] President, W. H. Leffingwell, Inc., New York, N. Y.

[5] Managing Director, Taylor Society, New York, N. Y.

The technique described here tonight can only be successful in large enterprises consisting of numerous plants if it harmonizes centralization and decentralization. Certain standards are set up centrally, as guides and measures of accomplishment, but individual executives express their own individualities in applying these standards.

This whole matter of harmonizing centralization and decentralization is basic to any discussion of a technique of collective administration and control of industry. Any such collective control makes necessary intimate, detailed direction of decentralized operating units. I hope everyone here tonight, therefore, will carry over this general discussion of basic technique for use at the last and one of the intermediate sessions of this meeting.

Henry P. Kendall,[*] Chairman. Dr. Person has put his finger on a very important feature in this program of control.

I was interested in Mr. Davis' story of their periodic review of the importance of reports in the interest of simplification.

Through the efforts of two or three men in our organization a rather interesting form of report has developed for my use and the use of the men in control. We operate on thirteen four-week periods and under four divisions. Five cotton mills in the South make up one division, two mills in Canada which manufacture surgical dressings for the retail and wholesale drug trade and have headquarters in Chicago make up another, the parent company which markets textiles and surgical dressings to the hospital trade is another, and a finishing plant in Rhode Island makes up the fourth division.

The week following every four-week period I receive a folder of forty to fifty pages. It is a photostatic copy of the charts kept in the comptroller's office. One sheet shows graphically the expected gross sales and the actual gross sales, the expected gross profit and the actual gross profit and the expected net profit and the actual net profit for the entire company. Cumulative averages are also given. On the second page all these things are shown for all thirteen periods of the previous year. A typewritten sheet opposite each chart gives the figures on which they are based.

There are four more sheets which give the same thing for each of the four divisions just described. This gives me a bird's-eye view of how things are going.

Then I turn over another sheet and there are profit-and-loss statements for the period and cumulative for the year, both for the company as a whole and for each of the four divisions.

I turn over another sheet and there is an analysis of the surplus account for the period and for the year.

For me the most valuable part of all is a six- or eight-page analysis by our comptroller, which gives the reasons for variations in the reports. They call my attention to both favorable and unfavorable trends, and I have the story. The remaining twenty-five or thirty pages are made up of detailed analyses which are used by the accountants, office managers and general managers of the divisions.

These reports represent the culmination of several years of attempts to get satisfactory executive reports. In these times the knowledge that they give of where we are expecting to go and what kind of performance we are getting against that expectancy is tremendously important.

Dr. Person. For the sport of it I should like to stimulate a little controversy. Might not John Williams say that Mr. Kendall's reports do not constitute a real budget—for control purposes? Like a sextant they do tell periodically how much he may be off a predetermined course, and enable him to set a new course, but not in time to save the distance lost. On the other hand Williams' flexible budget is like a compass which enables the helmsman watching it to turn the steering wheel to meet constant variations of wind and wave and current and thereby keep the ship on its course. The device in Williams' budget which turns the trick is a ratio derived by dividing the difference between estimated maximum and minimum sales by the difference between the respective costs of securing maximum and minimum sales. At any moment the executive can multiply actual sales by this ratio and secure a reasonably accurate determination of what the variable costs should be for that volume of sales. Knowledge of the correct variable costs for any actual sales is the compass which guides the manager to economical, profit-making adjustment of his operations to fit existing conditions.

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[*] President, The Kendall Company, Boston, Mass.

Mr. Kendall. I am glad to pick up the gauntlet since I am the man who was shot at. We do make very careful budgets based on sales expectancy and use them to figure departmental costs on every product we make. Every department manager and even every foreman is given an expense figure beyond which he cannot go. As far as expense is concerned these budgets are absolute controls. There is no possibility of escaping them.

I am familiar with Mr. Williams' flexible budget, but have never seen how it could be applied to our operations. For example, our Southern cotton mills operate full time and all the time for the simple reason that we do not plan to meet our cotton-cloth requirements with our own production. We make up the deficiency by purchasing cotton on the outside. And this condition holds to a certain extent for our whole organization. This is a principle around which we have built our organization.

We know the standard material, repair and labor requirements of our mills. Unless some radical change, such as a new invention, upsets these standards, it is possible to use them, together with estimated dollar values of sales and materials, to forecast costs pretty accurately and set up very definite controls for our operations.

Morris Llewellyn Cooke[7] I want to make one comment on something that was said this evening. It has always interested me to see how in the older sciences one event has followed another in logical sequence. Those versed in the field of electrical development, for instance, can trace through the decades those contributions through which present-day developments find their origin.

The same is happening in scientific management, though few will admit it. When I first started to make contacts with the work there were but few who would admit that even Mr. Taylor's work had been of any importance to them.

I feel, therefore, like personally thanking Mr. Brett because he has the kind of memory that enables him to acknowledge, ten years after the fact, that John H. Williams, a professional management engineer, gave him a fruitful idea. This seems to me tremendously important to a Society which has as many professional engineers in its membership as the Taylor Society. Such recognition will prove our strongest spur to action.

Harry Arthur Hopf.[8] Since nautical devices have been mentioned, I want to refer to a device I observed recently in the navigating room of a coastwise ship. It is a simple copper or steel disc on which are deposited, at the appropriate points, weights corresponding to the weights of the different cargoes and other materials on board. When the weights have been correctly calculated and disposed—a matter of a few minutes—the disc, which corresponds to the hull, is suspended. The result shows immediately whether or not the ship is properly balanced. Before the invention of this device, elaborate and time consuming calculations had to be made to provide this information.

To me, comparison of this new device with the old plan is like comparison of our present methods of controlling business affairs currently with the old system of laboriously gathering material which became out-dated before it was ready for use.

The concept of control, it seems to me, is one which is often endowed with a greater degree of absolutism than is warranted in practice. I do not like to think of control as a domination by figures, or of the comptroller as an officer who exercises control. He is, rather, the eye of management. Control at the top should consist of the illumination of all the facts that we can focus on a situation by bringing to bear the best judgment and thinking available.

The important thing is that decisions should be made as close as possible to the point of action, especially in dealing with industries which are nation-wide in scope. This is necessary if the various units of organization are to be effectively overseen by persons of the ability that we are likely to find at the several supervisory levels.

The quality of tolerance that has been reflected in Mr. Davis' approach to his subject is probably a sample of the open-minded viewpoint which exists throughout his organization, and that quality has undoubtedly had a lot to do with the acceptance of the techniques and mechanisms which he has described.

I thoroughly believe in those techniques and in the emphasis he has placed on simplicity. I believe, too, that the term "control" is repugnant to most people. If it is regarded as intelligent and constructive criticism after the fact, rather than meddlesome interference before the fact, the best long-run results can be achieved.

Mr. Davis. I should like to answer some of the questions raised by Mr. Brett and Mr. Cameron.

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[7] Consulting Engineer in Management, Philadelphia, Pa.

[8] Senior Member, H. A. Hopf & Co., New York, N. Y.

In the first place, we do not have a forecasted balance sheet. We hope some day to have it, however.

Our operating budgets are fixed. We explain situations that arise as we go along; we talk things over and annotate the budget for future use, but the budget itself stands. It gives us something to shoot at all the time, as I explained in my paper. We are very much interested in Mr. Williams' work on flexible budgets, although we have not as yet applied it to our own operations. Our new equipment budget is flexible and is amended as the year progresses.

As far as our unit costs are concerned, we break them down into a number of classifications, i.e., raw material, labor, supplies, etc. Our sales expense is broken down into brokerage expense, salaries, warehouse expense, absorbed freight, if we are selling on an f.o.b. basis, advertising and cartage. These, in turn, are each broken down into units in terms of cases.

As regards our research work on sales, we have the country divided into trading areas to which we assign the proper sales volume and expense for each product, as a means of comparing selling costs in different markets. When we find that we make more profit in one area than in another we go into the reasons for this condition in great detail.

I agree heartily with Mr. Hopf's conception of the comptroller's job. It should be his job to interpret things as they come along—to help to avoid disastrous situations by anticipating difficulties and suggesting prompt remedies.

News Notes

President Thompson Is Honored

President Sanford E. Thompson is to be made an honorary member of the Concrete Institute on March 3. The honor will be conferred in Washington for twenty-five years of writings on concrete.

Special Meetings

On January 27 the Society departed from regular procedure and called a special meeting of the organization in New York at the Hotel Shelton. It was the first of two meetings, which will take the place of the usual spring meeting out of town. The purpose is to gather together, through discussion by a wide variety of individuals, a body of suggestions for the relief and cure of depression.

At this first meeting relief measures were discussed; at the second, on April 14, long-time curative measures having to do with money, banking, credit and taxation will be considered.

On January 27 the following papers on the general subject of stimulating consumer demand were presented before dinner: "Public Works, Credit and the Arrest of Deflation," by Otto T. Mallery of Philadelphia; "Positive Government Action to Check Unemployment," by Edward P. Warner, Editor of *Aviation* and formerly Assistant Secretary of the Navy for Aeronautics; "Organizing Local Responsibility for Stimulating Consumption," by S. Park Harman, Executive Secretary, Rochester Civic Committee on Unemployment.

Participators in the discussion following dinner included I. Maurice Wormser, Dr. Mildred Fairchild, John Norton Johnson, Dr. William N. Loucks, Dr. Henry Pratt Fairchild, Daniel M. Bates, John J. Hader, Walter N. Polakov, Dr. N. I. Stone, John W. Lyman and Paul Wurtz.

Dr. Mildred Fairchild presented the following motion, which was approved by the group:

"That this group suggest to the Directors of the Taylor Society that they appoint a committee to consider the problems here discussed, and if they consider it advisable to present a program of action, that they do so."

New York Metropolitan Section

On February 18 Professor Walter Rautenstrauch of the School of Engineering of Columbia University addressed the regular monthly meeting of this group. His subject, "Control and Reduction of Overhead in Relation to Depression Periods," stimulated very general discussion. Herr Hugo von Haan of the International Management Institute was a guest of honor. He is spending six months in this country studying American management methods.

Central New York Section

This section continues to hold its regular monthly meetings in Syracuse. At the January meeting J. C. Howell, Vice-President of Standard Statistics Company, addressed the group on the economic outlook for 1932. In February Professor Hepner of the College of Business Administration, Syracuse University, spoke on a philosophy for business men.

Time Studies in Retail Stores[1]

Pioneering Effort Toward Scientific Retail Costing

By FRANK M. SURFACE
**Assistant Director, Bureau of Foreign and Domestic Commerce,
U. S. Department of Commerce, Washington**

FREDERICK W. TAYLOR is best known to the semi-lay public as having introduced methods of measuring unit production whether by men or by machines. Out of that concept have developed our modern, production cost-accounting methods. To these and the systems of management based upon them we owe the greater part of the remarkable industrial achievements of the past two decades. These achievements have been so outstanding as to constitute in reality a second industrial revolution.

At the time that Taylor did his work, problems of production were uppermost in the business world. There were demands for more products than the world could produce with the methods and equipment then in existence. Today that situation is completely changed. For practically every commodity we have the capacity to produce far more than consumers are able or willing to buy. Within the last few years the whole emphasis in business has shifted from production to distribution. For the moment we seem to have solved the most pressing problems of production. Productive efficiency has increased far beyond the corresponding efficiency in moving these products to the consumer. Manufacturers have often found that increasing costs of distribution have more than offset the savings they have been able to make in production costs. In this unbalanced condition we undoubtedly find some of the causes for the difficulties through which business has been passing in these last two difficult years.

Unfortunately, no man with the genius of Taylor seems to have arisen in response to our distribution problems. In lieu of that, it has occurred to some of us that it might be possible to adapt some of Taylor's concepts to the problems of commodity marketing.

For the past three years, we have been endeavoring in the Department of Commerce to study distribution from the standpoint of what it costs to handle individual commodities, to serve individual customers, and to perform other individual operations necessary in the transfer of commodities from the producer to the consumer. During this period we have carried on studies with manufacturers, wholesalers and retailers. As these studies have proceeded, it has become clear that the principal distribution costs can be classified under two headings: (1) those accruing to commodities, and (2) those accruing to customers. The goal of this work, therefore, has been to develop satisfactory methods of allocating costs to commodities and to customers. In the distribution by manufacturers and wholesalers both types of costs are important, but with the major emphasis perhaps on customer costs. In retail distribution commodity-cost problems predominate, often to the exclusion of tangible customer-cost problems.

In considering the question of cost allocation to commodities and customers, our staff has found it necessary to divide all costs into functional groups which are somewhat different from those usually used in accounting practice. At the present time we are using four main groups with several sub-groups. These main functional groups are: (1) maintenance, or the cost of maintaining an establishment ready to offer commodities for sale; (2) movement, or the cost of transferring commodities to the customer, including all selling, handling, delivery and restocking costs; (3) promotion costs, including advertising, cultivation, display, etc., and (4) reimbursement, or the expense of maintaining a return flow of money to balance the outflow of goods.

I shall not attempt here to go into the reasons for these groupings or the theories upon which they are based. This could be done much more thoroughly by those members of our staff responsible for the development of this work, particularly Mr. Wroe Alderson, who has developed the theory and practical application of our distribution-cost studies.

What I do wish to do is to point out the significance of some of the time studies we have had to make in connection with the application of costing methods to retail-store operations. We have so far carried out, or are carrying out, two important studies in the field of retail costing. These are the Louisville Grocery Survey and the National Retail Drug-Store Survey now under way in St. Louis. The time-study methods used in these two surveys are radically different. It is our belief that the methods now being used in St. Louis are a distinct improvement over those employed in Louisville, although the results of the drug-store study are not yet available.

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[1] Paper presented before a meeting of the Taylor Society on Marketing, arranged by the American Marketing Society, New York, December 3, 1931.

The Louisville Grocery Survey consisted of an intensive study of the operations of twenty-six independent grocery stores for a period of three months. The survey started with a physical inventory of each store, after which all purchases of commodities and all price changes were recorded, and closed with a second physical inventory. From these data we had for each single item handled by a store the stock on hand at the beginning and end, the turnover, the cost of the goods, the amount they sold for, and the gross margin. We also secured an accurate record of expenses for each store, including allowance for rent of owned building, proprietor's salary, interest on investment, etc.

The problem then was to allocate these expenses justly against each commodity handled. It is clear that the cost of handling commodities is not the same for each. For example, a customer asks for five pounds of sugar and the clerk reaches behind him for a package and the transaction is completed. If the customer asks for ten pounds of potatoes, or for two pounds of tub lard, the clerk has to do many additional things which require much more time than it took to sell the sugar. Clerk time is by far the most important movement expense in a retail store.

Many stop-watch studies were made in Louisville of the time required to sell and handle individual commodities, but the facilities were not at hand to make these extensive enough to form in themselves a basis of cost allocation. Instead, resort was had to time studies for definite periods which accounted for the entire clerk time of the store classified by functions performed by each clerk.

The method by which this was accomplished is as follows: Sheets were provided, one for each clerk, with headings showing each half hour in which the store was in operation. Down the left-hand margin of this sheet were listed the various functions undertaken in store operation. These functions in the grocery trade were seen to be: cleaning, stock care, telephone solicitation, order assembly, service to customers, delivery, buying and receiving, clerical work.

It will be at once clear that this form discloses for the single clerk the number of minutes in each specific half hour that were spent in the various operations habitually conducted in the store and that it further makes provision for the analysis of this time according to the period in which the operation was performed. The utility of this is considerable, since it permits the measurement of the peak load of business.

By the use of this form it was possible to measure the amount of time at varying wages spent in the entire store in the performance of its necessary functions. Consequently the activities performed against each type of commodity sold could be charged with an accurate quantity of operating time.

The major problem of the retail grocer in dealing with the question of wages is the arrangement of the store's activities so as to care for the peak loads of business without delay and at the same time avoid the employment of so large a clerk staff that idleness is supported during other hours.

The productive functions of the business, that is, the labors immediately occasioned by the passage of goods through the store, consumed 61 per cent of the entire clerk time of the establishment in a typical service store having a volume in excess of $75,000 annually. This group of functions—service to customers, telephone solicitation, order assembly, delivery, buying and receiving—must be supported to permit a continuous cycle by two other activities—cleaning and stock care—and by a third type of labor—bookkeeping and clerical work.

This method of time study also pointed out the peaks occurring in various activities throughout the day. About 60 per cent of the commodity movement through a grocery store occurs in the forenoon. This is particularly true of delivery activities. With regard to service to customers, there is a clear relationship between the number of incoming customers and the three general meal-time periods. The records for every store showed one peak in the morning hours before eight o'clock; another peak, usually less pronounced, about eleven o'clock in the morning; and a third peak, often the most pronounced, occurring in the afternoon between four and six. The prominence of these various peaks depended to a considerable extent upon the character of the neighborhood in which the store was located. Among other things they indicate that the average family carries little reserve food on its pantry shelf and makes many of its purchases for each meal just before preparing it.

These peaks of customer incidence present one of the most difficult problems for the grocer to solve. If he has sufficient help to take care of the customers at the peak periods, he is certain to have considerable idle time during the lull in business. This problem is more pronounced in a purely cash-and-carry store than it is in a service grocery where the assembly and delivery of orders can to some extent be spread over the dull periods.

In the allocation of movement expense to individual commodities, considerable difficulty was experienced in using the data from these time studies. The actual allocation of the total functional expense disclosed by these time studies had to be on a more or less rigid basis. For movement costs this allocation was based on the number of sales items for each commodity. This sales item for each commodity had to be determined as the amount of the typical purchase by the typical customer. Against this basic allocation there had to be applied certain penalties or rewards to take account of certain portions of the expense for which they were or were not responsible. For example, in the case of milk and bread the wholesale supplier examines the merchant's stock and decides upon how much is required. This relieves the grocer of certain buying operations which should not be charged against these commodities. These adjustments were based on time studies in handling individual items and were sound in principle but difficult and time consuming to apply. Since the total expense of the store had to be charged against the commodities handled, the adjustment of the accounts on a single commodity required the readjustment of the accounts of all others.

This necessity for these adjustments and readjustments was the principal reason for a reconsideration of the accounting plan for use in the national drug-store survey. It was seen that the rigidity and inelasticity of the material produced in Louisville would erect, if applied to the drug trade, an insurmountable statistical barrier. There was seen the need for a more flexible procedure which would by some adequate machinery set up rewards and penalties in the first instance according to each commodity's responsibility for expense in its passage through the store. It was consequently decided that the time studies to be undertaken in St. Louis would be applied to individual commodity items rather than to a set of functions which individual items might or might not be in part responsible for. So it will be seen that there is a fundamental difference in concept between the methods employed in the two studies.

The method being used in St. Louis is, it is thought, the more scientific and it will be conceded that it is more simple and easy of operation. It involves as well a measure of the store's achievement of its theoretical capacity to sell merchandise.

We may look upon the processes through which merchandise passes on its way through the store as links in the expense chain. These processes in the retail-drug store were conceived to be as follows: ordering, receiving, checking in, paying for purchases, storage or distribution to retail stock, manufacture, apportionment, selling, wrapping, delivery, receiving reimbursement.

It will be at once clear that there is a wide difference between this list of functions to be measured and the list used in Louisville. The measure in Louisville was directed toward the function as such whereas in St. Louis it is directed toward the commodity and its particular responsibility for certain types of clerk activity. It will be clear that some commodities may skip certain of these links or processes on their way through the store. For example, goods on fixed order, such as ice cream, will not have to be charged with a unit of buying cost each time a shipment of such merchandise is received. The supplier of such products automatically delivers at fixed intervals and places in the merchant's stock a given amount without action on the part of the merchant himself. These goods may, however, pass through all other process links. Another exception is that goods sold as bought will not pass through the processes of manufacture or apportionment; goods purchased in less than case lots will not bear charges resulting from placement in the storage room; many will never receive a wrapping charge and many will be freed of the cost of delivery. While these are but a few examples, they are no doubt sufficient to point out the elasticity of the measure devised for use in St. Louis.

The five measures by which commodity responsibility for expense will be determined are as follows:

1. The first measure consists of observations of activities in buying. The activity of the individual store will be measured in this respect by observational and stop-watch tests showing what employe of the store buys what goods from what sources in what quantities and at what prices under what conditions. It will

distinguish between routine or replacement buying and speculative buying (the introduction of new items of merchandise into the store's stock).

2. The second measure uses a composite form which provides the information necessary to the establishment of the expenses of the processes of receiving, pricing and shelf replenishment. This form makes provision for noting the time consumed and the nature of the operations observed. It notes what clerk performed the work, and consequently at what wage, the number of pieces involved, whether they be wholesale packages or retail units.

3. The third measure consists of observations of the activity of payment to suppliers. This measure will show the amount of time spent in this activity, the actual observations made, and the name of the supplier for whom the operation was undertaken.

4. The fourth measure covers the observation of the activity of delivery. This provides a measure of time spent as well as other useful information.

5. The fifth and by far the most important measure, since it is believed that the greatest variety in cost responsibility will be found here, is the measure of time spent in actually selling different merchandise items. The form used in obtaining this information provides complete data as to the sex and approximate age of each customer observed. It also shows the names of the sales persons, the article asked for, brand specified, article sold and brand sold. It also shows the actual value of the sale, and makes provision for a "yes" or "no" check concerning the necessity for persuasion or advice, busy or slack time of day, article easy or hard to procure, on special sale, process at time of sale, packaged, or delivered. The actual stop-watch measure of time applied to the individual sale is broken down into three parts: selling time, wrapping time, time spent in receiving payment from the customer. Provision is also made for the inclusion of the observer's comment, which permits the acceptance or rejection of a particular observation as a standard or an extraordinary performance. Separate space is provided for wrapping time and the time spent in receiving payment. It was desired to secure a measure of the time necessary for wrapping. It was also necessary to secure a measure of the time spent in receiving payment. No single commodity is likely to be responsible for excessive charges in either of these respects. It is substantially as easy to wrap one drug-store item as another, and it is not any inherent fault of any particular item which causes the customer to change a large bill or to spend much time in searching his pocket or pocketbook for the money.

These time-study cards will also be sorted for the time of day in which the transactions occur and particular emphasis will be laid upon activity rates during peak periods. These peak periods may be presumed to represent operations at capacity. The difference shown in the operating time at other periods will give a measure of the cost of idle capacity and should enable the determination of a sharper distinction between fixed and variable costs. It is hoped that by these methods it may be possible to develop a set of standard charges which can be used directly in cost calculations in drug stores throughout the country.

Trained observers stationed in each of the fourteen drug stores under observation are obtaining this information for a large number of the customers visiting each store. Ultimately we shall have a considerable number of such records for each important item handled in the drug store.

These selling observations should be productive of much valuable information other than that necessary to the establishment of expense. It is thought they will show to a very considerable degree the exact character of the store's selling effort and the habits of its sales people. They will show as well the degree of efficiency with which the physical plan of the store is set up. Since the measure of selling time required by different sorts of commodities can be compared to the total incidence of sale, this form has already been strikingly successful in providing information as to the excellence of store arrangement. Information secured from them in this respect has been included in Part I of the St. Louis Retail Drug-Store Survey, "Drug-Store Arrangement," now at the printing office.

Among other things these records will provide information on the amount of impulse buying and the customer-attracting character of store displays. Every movement of the customer is recorded including second and third purchases, if any, and the interest displayed in other merchandise whether purchased or not.

It will be understood that these are still pioneering efforts both in retail costing and in time studies to secure a more accurate picture of the operations which take place in a retail store. No doubt as we shall look back upon them from the vantage ground of a few years hence, they will seem extremely elementary and crude. We believe, however, that they represent a step in the development of scientific management in merchandising.

FORM NO. 1

OBSERVATION OF PURCHASING IN THE DRUG STORE

Date
Source of Supply
Is this a regular source?
Who did the buying?
How many items were bought?
Of these, how many were:
A- New Items
B- Replacement items
Nature of the Operations Involved:

Time spent in actual buying, or in consultation with the supplier's representative.

	Hrs	Min	Sec
Actual buying time			
Other time (describe)			

IF THE PURCHASE WAS MADE BY TELEPHONE:
Who originated the call?
IF PURCHASE MADE BY PERSONAL CONTACT:
How long did the salesman wait for attention?
IF THE PURCHASE WAS MADE BY MAIL:
How much time was spent in actually preparing and mailing the order?

Remarks
Checker National Drug Store Survey

FORM NO. 2

RECEIVING, PRICING, & SHELF REPLENISHMENT IN THE DRUG STORE

Date
Clerk Observed
Number of wholesale Pkgs received
Number of pieces priced
Number of pieces shelved
Nature of operations observed:

Time spent	Hrs	Min	Sec
In Receiving Goods			
In Pricing Goods			
In Shelving Goods			
Other time (describe)			
Total time			

Remarks

Checker National Drug Store Survey

FORM NO. 3

PAYMENT TO SUPPLIERS OF THE DRUG STORE

Date

	Hrs	Min	Sec
Time spent in making pay't			

Nature of Operations Involved:

Details of Payment

To whom paid	$ By Check	$ in Cash

Remarks

Checker National Drug Store Survey

FORM NO. 4

OBSERVATION OF DELIVERY ACTIVITIES IN DRUG STORE

Date
Equipment Used
Car fare provided
Number of Delivery Stops

	Hrs	Min	Sec
Elapsed Time			

Hour of departure
Nature of Operations Observed

Name of Delivery Clerk

Remarks

Checker National Drug Store Survey

FORM NO. 5

Customer No. Male Female Age
Salesperson
Article asked for
Brand specified
Article sold
Brand sold

(Check Yes or No)	Yes	No
Did the clerk persuade or advise?		
Was the sale made at a busy time?		
Was the article easily procured?		
Was it on special sale?		
Was it processed at time of sale?		
Was it packaged?		
Was it delivered?		

Value of the Sale $

	Min	Sec
Selling time?		
Wrapping time?		
Time spent in receiving payment?		
Total time consumed in sale?		

Remarks:

Store Date Checker

Hospital Management[1]

Some Economic Issues in Hospital Management

By C. RUFUS ROREM
Associate for Medical Services, Julius Rosenwald Fund, Chicago

HOSPITALS are in many respects typical of all business enterprise. Procedures of scientific management in a hospital are much the same as those in a hotel or other place of business. But hospitals are also in some respects different from other business. The differences do not appear in the detailed procedures, but in those phases of scientific management concerned with the "policies" of the institution as a whole. It is important to recognize certain economic aspects of hospital service if the public is to understand the problems confronting the directors of hospitals, and if the hospital administrators themselves are to direct their institutions to the best advantage.

I

Hospital services must be sharply differentiated economically from certain other types of medical care rendered in the hospital buildings. Hospital care itself includes several distinct services for which the patients pay separate fees. The distinctive hospital product is the service usually referred to as "board and room," which includes the use of a bed, three meals per day, and, within certain limits, the ministrations of graduate or student nurses. It is the board-and-room service for which a patient pays his room rate of $5.00 or $8.00 per day. Other important products of a hospital are X-ray services, laboratory services, and other diagnostic or therapeutic procedures. An increasing number of institutions are also providing office care to patients who are "up and about." Each hospital service is usually charged for as a separate hospital product, if charged for at all.

But there are also other economic and professional activities in the hospital which are not ordinarily under the hospital's direct control. The services of attending physicians and surgeons are not usually considered as hospital products. Doctors have been regarded as conducting their own businesses when dealing with their private patients in hospitals. They form their business relationships with such patients with little or no knowledge or supervision on the part of the hospital superintendent. Likewise, when additional nursing service beyond that included in "board and room" is required, the "special nurse" and the patient effect financial dealings independent of the hospital authorities. The hospital building, therefore, may serve to house three independent business entities—that of the hospital, the doctor and the special nurse. Each separate professional service is purchased and paid for independently by the patient. Only the "hospital" services, as such, come under the direct supervision and financial control of the superintendent.

At one time all financial problems of services in the hospitals were controlled by the institutions themselves. Only non-paying patients were accepted, most of them being admitted for isolation rather than to improve professional care. But the hospitals have changed from hospices for the poor or hopelessly sick; they are now workshops for carrying on the highest type of professional activity. When private self-supporting patients were first admitted to hospitals, they were introduced as guests by the physicians of the community. The hospitals accepted these *paying* patients as a courtesy to the medical staff who attended the *free* patients. The policy of selling as well as donating hospital services was thus entered upon by inviting the medical and nursing professions to attend their paying patients within the institutions. The hospitals' financial dealings with private patients, originally few in number, were, of course, limited to the services rendered by the hospital personnel and facilities. At the present time the paying patients of private physicians have become the most important source of the revenue for the hospitals of the United States.

The independence of the hospital, the physician and the special nurse, each charging separate fees, at times results in sharp competition for a share of the patient's resources, for the patient's ability to pay a certain doctor's fee may be directly influenced by his length of stay or type of accommodations in the hospital. Likewise, the substantial fees required for special-nursing service may make exceedingly difficult the payment of either a hospital bill or doctor's bill. The hospital superintendent, therefore, is not able to regard his product as an independent commodity merely to be delivered to and paid for by his customer. Hospital care to paying patients is usually delivered along with an economically competing product, namely, the services of an attending doctor or a special nurse.

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[1] Papers presented before a meeting of the Taylor Society, New York, December 3, 1931.

Some hospitals are making an effort to co-ordinate to some degree all financial relations with patients. One institution has inaugurated a middle-rate plan by which physicians' fees are limited in amount for patients occupying certain types of room accommodations, and by which special-nursing service is permitted only on recommendation of the attending doctors and the hospital authorities. A number of other hospitals, particularly those connected with universities, have engaged full-time doctors who serve as representatives of the hospital and who attend all patients accepted by the institution. The hospitals thereby tend to become medical centers offering various types of professional services, rather than mere buildings in which independent professional activities are performed. Such policies of co-ordination, if developed more widely, would do much to clarify and aid in the solution of problems of hospital management and economic policy.

II

Most hospitals have been constructed and equipped by the general public, who have contributed funds for the purpose either voluntarily or through taxation. Hospital plant and equipment are usually financed on a non-profit basis, without expectation of repayment of principal to, or the receipt of earnings by, the individual investors. Even in those cases where hospital bonds are issued by a private charitable institution or a government, it is usually expected that the interest payments or ultimate redemption of the debt will be accomplished by voluntary contributors or tax-payers rather than by the hospital's earnings from the sales of its product. The hospital superintendent, therefore, conducts his business with a publicly owned plant and equipment.

The fact that most hospital service is conducted with capital supplied by the community has influenced hospital management in several ways. It has tended to obscure in the minds of some hospital superintendents the existence of the overhead costs of interest and depreciation. In those cases where allowances for interest and depreciation need not be recorded to balance the cash expenditures of the hospital, some hospital directors appear to have forgotten that plant and equipment represent important economic outlays from which the public has a right to expect the greatest possible professional benefit. The ordinary hospital ledger of accounts contains no allowance for depreciation or interest on the investment in plant and equipment.

If this omission had its influence merely upon the ledger, the practice would be of no great importance. It would be a matter of interest only to accountants, who might then argue over the problem. But when a community donates $500,000 or a million dollars to build, equip or endow a hospital, it withdraws that money from other public or private enterprise. The money invested in a hospital, which will last thirty or fifty years, cannot be recalled and subsequently invested in a playground, a church, a milk fund or in a profitable business. Interest and depreciation are actual costs to the community of hospital service, even though these "fixed charges" may be paid in advance through public provision of plant and equipment.

An analysis of the total costs of hospital service reveals that the fixed charges per patient-day may range from fifty cents to $5.00 depending upon the degree to which beds are occupied and upon the relative amounts of investment per bed. It is important that hospital superintendents realize the tremendous waste of public funds when hospital rooms and scientific apparatus remain idle for want of an administrative policy which would bring them into public service. The recognition of fixed charges as costs of hospital care does not mean that patients' fees should necessarily be established at levels sufficient to recover allowances for interest and depreciation. This recognition may, in fact, merely serve as the basis for removing the burden of fixed charges from certain classes of patients. The important thing is to recognize the responsibility for adequate use of the publicly owned plant and equipment. The benefits of the public's investment in hospitals can be realized fully only when the plants are utilized to the greatest degree consistent with good professional care.

The superintendent of a hospital is not always responsible for the inadequate utilization of plant and equipment. He may be in charge of an institution built without regard to the needs of the community, planned without regard to economies in operation, or erected merely as a lavish monument to a wealthy donor. A public awareness of the place of fixed charges in hospital costs, and of the influence of plant and equipment upon other operating costs, would tend to discourage unnecessary, poorly planned or elaborate hospitals. As a result, existing institutions would reap economies from quantity production, and hospital managers would have access to additional community funds for the payment of operating costs. Some hospital directors and trustees are fully aware of the importance of fixed charges in hospital financing and costs, but the subject still requires careful study and attention.

III

Medical care—including hospital care—is regarded by the public not only as an economic commodity, but also as a philanthropic service. For patients able to purchase and pay for hospital care, the product of a hospital is expected to be supplied at a price equal to its full cost of production, including fixed charges. Other members of the population are expected to receive hospital care free or at fractions of the total costs of the various services they require. The superintendent who delivers hospital care free to patients turns for repayment to the financially able members of the general public. These persons are expected to finance the free care of others through paying fees which yield net surpluses, or through voluntary or tax contributions. As a rule, a hospital finds the revenue from paying patients insufficient to cover the total operating costs of the institution's services (even when fixed charges are excluded from the calculation).

The social policy of attempting to provide hospital care according to a patient's need rather than his pocketbook is the cause of much confusion in the public mind with regard to hospital efficiency. Daily "room-rates" of hospitals are compared with those of hotels, with the implication that if hotels can be managed with profit to the owners, hospitals should at least be self-supporting. There are, of course, very few hotels which could meet their operating costs if from one-third to one-half of the guests paid nothing at all, or amounts substantially below the costs of the services they received. It takes money to pay expenses, and if patients cannot pay the costs of services they require, the superintendent should have authority to do one of two things—to refuse such patients admittance to his hospital or to demand adequate payment by the public for all services rendered to its individual members.

A deficit may result either from excessive expenditures or inadequate receipts. Expenditures are in large part under the superintendent's control and he should be expected to reduce them to the minimum. Receipts are also in large part under the superintendent's control, and he should be expected to keep them at the maximum consistent with the public policy adopted by the trustees and the hospital's supporters. But when the public demands that care be given to its individual members, it should also guarantee adequate payment, and should not place the responsibility of financing such service entirely upon the superintendent's shoulders.

The superintendents of hospitals are in part responsible for misunderstandings of hospital financing methods. They have allowed their need for public support to be referred to as "operating deficits" instead of as "costs of services" rendered to the general public. The difference between operating costs and patients' fees may be regarded merely as a statement of the costs of professional services rendered to the public—a bill which the community should expect to pay promptly and in full. To the extent that such a bill appears unduly large, it should be scrutinized with care. It is the superintendent's obligation to remove from the community any portion of the economic burden resulting from his own inefficiency. But it is the public's responsibility to remove from the superintendent that portion of the economic burden resulting from the community's demands for hospital care or from an unwise investment of that community in plant and equipment.

IV

A carefully planned system of cost analysis would be of immense benefit to a superintendent, not only in the control of hospital expenditures, but also in the enlistment of public support. Hospital service, as has been stated, is not a homogeneous product. Some departments are self-supporting from patients' fees. Some are not. If the total costs of each hospital service were determined separately, such calculations would show clearly the need or opportunity for economies from increased utilization of hospital facilities. Unit costs could be calculated for board-and-room care, X-ray services, laboratory tests, etc., and these costs then compared with existing fees. The comparison would permit the establishment of fees intended to yield the greatest surplus or the minimum loss from certain services. It may prove, for example, that a lowering of the fees for X-ray services would result in such an increased demand that unit costs would be materially reduced.

The public's interest in hospital care requires that some fees be established at levels presumed to cover only portions of their respective costs. The very low daily rates in most hospital "wards"—$2.00 or $3.00—are evidence of this public policy, for these rates are presumed to be lower than the costs of the services to which they apply. The ward rates are established at these levels for the purpose of allowing certain members of the population to benefit from the public's voluntary and tax contributions, but also to pay sums within the limits of their reasonable ability to pay. The data from an analysis of hospital costs would enable the hospital superintendent to show clearly which of the various services were not self-supporting from patients' fees. For example, one hospital's entire need for public support may result from the inadequate fees collected for board-and-room care in the wards or from out-patient care. In another institution the need for public funds may be traceable directly to the costs of education for student nurses. But it should be made clear that community support of hospitals is, properly considered, merely the payment of a bill for important public services and not a subsidy for poorly trained hospital administrators.

V

In summary: Hospital service is similar in many details to other types of business. The economic policies now current in hospital service, however, create special problems which make hospital administration unique, complex and difficult.

First, hospital care is usually delivered in conjunction, and frequently in economic competition, with a doctor's or special nurse's services.

Second, hospital service is conducted with the use of community capital, donated without expectation of repayment or of interest earnings. This fact has tended to obscure the role of fixed charges in hospital costs, also the economic advantages of adequate utilization of plant and equipment. The public's method of investing in hospitals has at times burdened efficient superintendents with the management of institutions which were unnecessary for a community's needs or which were so poorly planned as to interfere with economical administration.

Third, hospital service is in part regarded by the public as a social service to be provided without regard to ability to pay. Fees have usually not been established with a view to recovering the full costs of the services, and many individual patients pay little or nothing for hospital care.

Fourth, analysis of the costs of hospital service would be desirable as a basis both for efficiency and for adequate financing, for, if fees are to be kept low by public policy, the cost analysis provides the explanation of the need for public support and sets forth a detailed statement of hospital services for the general public. Cost analysis from this point of view would be an aid to financing, as well as to internal efficiency of administration.

Hospital Management as a Business Undertaking

By LEWIS N. CLARK

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IN DR. HOWARD HAGGARD'S book, "Devils, Drugs and Doctors," he tells us that in 1505 the Parliament of Paris nominated a commission of eight citizens to manage the temporal affairs of the Hotel Dieu. He says: "Whatever the shortcomings in medical practice may have been, there was at least a healthy directness in handling administrative difficulties; the monks and nuns who objected to the changes that were made were dismissed, and the physicians who sided with them were committed to prison." How often the management of the hospital of today would like to use this kind of "healthy directness." Max Nordau's account of the horrors of the Hotel Dieu at that time, Semmelweis' description of the Gratz Hospital as recently as 1850, and La Forte's of the Maternité of Paris in 1864, should, however, give us some encouragement when we consider how far we have come and how few are our shortcomings in comparison with the hospitals of seventy-five years ago. I believe that in no line of human endeavor has such progress been made, even though all hospitals, no matter how carefully they are managed, are still the object of more or less frequent criticism.

Everyone who has the responsibility of a hospital is willing to acknowledge that his institution deserves criticism in many instances, and that things occur (sometimes far too frequently) which are very much to be regretted. I am going to try to show later on why it is so difficult to prevent many of these occurrences. One criticism, however, which every hospital man resents as he would an unkind word about his only child is that of extravagance. When I hear someone say that hospitals "throw the public's money around" or that they would be more careful how they spent their money "if they were in regular business," I feel a great deal of resentment. There is only one business in any way comparable to hospitals, and that is the hotel business. One often hears a hospital compared to an American-plan hotel, usually to the advantage of the hotel. Let us have a look at this comparison and see if the charge of hospital extravagance is justified.

I found it somewhat difficult to get accurate figures on hotel costs. Also, it was necessary that I know what part of their costs was included in the items, interest on investment, taxes and depreciation. Hospitals have no interest on investment as a usual thing because the money which builds them is given by the public. Very rarely is any depreciation figured in a hospital's operating costs, and they are free of taxes unless privately owned. Two prominent firms of auditors and hotel cost accountants very kindly furnished me with the figures I needed, and I am glad to acknowledge my indebtedness to them. Messrs. Horwath and Horwath have given me a composite figure of $6.70 cost per guest per day. Included in this is $1.75 a day for the three items I have mentioned above, leaving a net operating cost of $4.95. They have warned me that these figures are for American-plan hotels, that very few of them operate twelve months a year, and that the costs are consequently higher than they would be if these hotels operated continuously. Messrs. R. M. Grinstead and Company have compiled figures for me from averages of over 150 hotels of various sizes. They show an average cost per guest per day of $5.75. The items of interest, depreciation and taxes account for $1.40 of this, leaving a net operating cost of $4.35 per day. If we strike a mean between these two groups of hotels we arrive at a figure of $4.65 per guest per day, *not* including the items I have mentioned.

As to hospital operating costs: The Commonwealth of Pennsylvania reports for twenty-eight state-aided hospitals of 200 beds and over, for the year ended February 28, 1931, an average cost per patient per day of $4.64. This group of large hospitals (my own being included in the twenty-eight) includes those caring for well-to-do patients in private rooms, as well as ward patients. City hospitals, which care for ward patients only and whose costs are kept down to a minimum, are not included. These hospitals give an American-plan hotel service—but they give a great deal in addition. All of this is included in the patient-day cost. I am quoting the average for the twenty-eight hospitals. The operation of the Pathological Laboratory costs seventeen cents per patient day, the X-ray Department seventeen cents, the Special Therapy Department four cents, and the Social Service Department five cents. The Out-Patient Department, (although it has nothing to do with the in-patient cost) was included in these figures sent out by the State, and costs eleven cents per in-patient day. Ambulance service costs three cents, anesthesia costs eight cents, medical and surgical supplies nineteen cents, drugs thirteen cents, medical services eight cents and nursing sixty-seven cents. This leaves us $2.92 of our $4.64 per diem cost and we still have one important item left before we can make a fair comparison with the hotel figure. Hospitals not only care for the sick; many of them are training schools for medical students and twenty-seven out of the twenty-eight hospitals reporting have training schools for nurses. There is an average of from one to one-and-a-half pupil and graduate nurses to every three patients. Hidden away in the housekeeping, dietary, operation of plant and maintenance and repair items is the care of the nurses home, the feeding of the nurses, and again the housing and feeding of the employes who care for the nurses' quarters and who feed them. Add to this the living expenses of the intern staff and the cost of laundry for all the nurses and interns, and you have another item of cost (which hotels do not have) of at least eighty-seven cents per patient day. We now have a balance of $2.05 left as compared with the hotels' cost of $4.65 per guest day, and I have not attempted to show the living cost of the dietitians, anesthetists, druggists and other hospital employes who, because of the nature of their work, must live within the hospital and be kept by the hospital.

I do not believe this group of hotels, the cost figures of which I have given above, can be charged with either extravagance or inefficient management. It can be taken for granted that their costs are as low as is consistent with the good service they try to give.

I trust that I have satisfactorily met the charge of extravagance in hospital management, and I would like to show you that this very low cost figure is partly responsible for the other criticisms which are directed at hospitals. I think it reasonable to assume that in a hotel the room clerk takes care of the room-clerk's work and nothing else, that the cashier limits his duties to those of a cashier and that the same can be said of the floor clerk. An entirely different state of affairs exists in the usual hospital. The cashier, instead of giving his undivided attention to the satisfactory settlement of the bill of a patient about to leave, usually has two or three telephones on his desk and at the same time is taking a room reservation from one doctor, an ambulance call from another, and possibly trying to satisfy all concerned in making an entry on the operating-room schedule on the third telephone. Is it any wonder that the friend of the patient who is trying to pay his bill for him gets somewhat impatient and leaves the hospital cussing it soundly? The switch-board operator instead of attending to her legitimate business often acts as information clerk, notifies the families of very ill patients, and also sends out word of operations not only to members of the family but to all the doctors concerned in the case. Recent counts made at my own hospital showed that one telephone operator handled an average of eighty calls between the hours of twelve and one o'clock noon, at the same time that she relieved the information clerk who was at lunch, answered all inquiries as to the condition of patients, was supposed to locate every one of the twenty-five to fifty doctors somewhere in the plant, and this *immediately,* and at the same time listened courteously to the life story of the sister-in-law of a patient who was supposed to be in the hospital but was later located at some other hospital. All this had to be done with courtesy and care, or you can be sure that the Superintendent's office would soon hear of the hospital's "rotten telephone service."

The head nurse on the ward or private floor is head nurse, floor clerk, complaint receiver, newspaper boy and general handy-man. She is trained as a nurse and primarily interested in nursing; one of her principal duties is the training of the pupil nurses at work in her section of the hospital, but because of the ever-present financial shortage, she must combine her nursing duties with many other less important ones, sometimes with most unsatisfactory results.

Every business man recognizes the need of well-trained workers in his organization, and, beyond this, workers who have definite jobs to which they are permitted to give their undivided attention. If I were to take any one of you through an average hospital and show you the multitude and variety of duties imposed on many of the personnel, you would wonder, I think, why more errors were not made.

An additional source of trouble is the training school for nurses. I have been told many times that it should be easy to keep the cost of operating a hospital at a low figure when the ridiculously low allowance paid the student-nurse body is taken into consideration. It is true that the average payments to pupils in hospital training schools is not over $10.00 per month, but the cost of maintaining this large "girls' boarding school" is a considerable item. I have no average figure for a group of hospitals, but in our own the cost is about $580.00 per pupil per year which, added to the allowance of $120.00 per year paid the pupils, brings the cost of this help to nearly $60.00 per month. Years ago the pupil nurse scrubbed floors, did general house-cleaning and other menial tasks entirely unconnected with the profession of nursing, but supposedly preparatory to it. It is fortunate, for her self-respect and the self-respect of the institutions, that this is no longer the case. Also, in order to fit these girls properly for the practice of their profession, such a large aggregate number of hours is required in the classroom that during the first year particularly they are not very useful to the hospital. There is much discussion in the hospital world just now as to whether it would be cheaper to operate hospitals by employing graduate nurses only, or to continue to operate with the student-nurse body under the supervision and direction of graduates. My own opinion is that graduates—and no training school—would be cheaper, but it seems to me this is a discussion which gets us nowhere since pupils must be trained before there can be graduates. If a number of the training schools were to close down, the present oversupply of nurses would soon become an undersupply and the schools would have to open again. It is true that hospitals are now turning out more nurses than can find employment, but I believe that this is a temporary situation due to the financial depression which is causing unemployment in all other lines of work. A hospital is fulfilling one of its duties to the community in turning out good, well-trained nurses, just as much as in caring for the sick. It is a great satisfaction to a hospital to do so, but it cannot be said to be an unmixed blessing. The students are constantly in touch with the patients and their families and friends, and when I remind you that these students when they come to the hospital are just the same as any other group of boarding-school girls, you will realize the possibilities of trouble in the situation. They are, generally speaking, serious minded and intent on becoming proficient in their profession, but they are young and sometimes tactless, and many of the criticisms of hospitals arise from the fact that they are young and tactless.

To bring myself back from the discussion of nurses' training schools to the matter of the exceedingly low cost at which hospitals are operated, a natural question is why the administrator of the hospital puts up with the state of affairs one so often finds. I believe the answer is that the executive is more at fault (if fault it can be considered) than anyone else. He realizes as well as any of the trustees just how difficult it is to find sufficient money to run a hospital as it should be run. He goes to his Board and says: "This error that we have committed and that error, and the other one, are due to the fact that half the people in our employ are trying to do more than it is humanly possible to do; we must spend more money." And what is the answer? Boards are already raising all the money they can. No hospital administrator will recommend cutting down on the free work of the ward and out-patient services unless it is the last remedy he can think of, and if the charges for private rooms and services are increased there will be trouble with the community.

In theory, those who are sick should not be made to pay fancy prices for their misfortune. The wealthy undoubtedly have a right to feel that they give generously to charity and that when a member of their families is ill, they should not be made to pay an amount which will show a profit to the hospital. I have often thought that an ideal arrangement would be to make only sufficient profit from the more expensive private service to insure good care for "the people of moderate means" at a price so low that illness becomes possible for them in a dignified way without the necessity of going into the wards. This would certainly please the people of moderate means and would remove one of the principal causes of criticism to which hospitals are subjected. The wealthy would not object if private accommodations at a wide variety of prices were available for them, from which they could take their choice, and if the total receipts from these variously priced services were sufficient to pay the cost of all of them. This would, of course, leave the hospital holding the bag for its ward and dispensary services. It would be just a little worse off than it is now—with usually a small profit from the private services to be applied toward the staggering costs of the free services.

The doctors working in a hospital find themselves in very much the same situation. They are criticized for sending big bills to their wealthy patients and for charging a very handsome sum for a single operation. Does anyone stop to think of the amount of free service they give the poor and unfortunate, not only in the wards and dispensaries but in their offices and in the patients' homes? An effort is now being made to evaluate the amount of free work done by the staff of my own hospital in a year's time. The complete figures are not yet available, but it is not difficult to arrive at an approximate figure which will be close to the true one. One hundred thousand visits a year are made to the dispensaries. No doctor who has a good medical education and experience, so far as I know, will see patients in his office for a dollar a visit, but since this is somewhat similar to mass production, we have put this value on each visit the patient pays to the doctor in the dispensary. There are each year 18,600 days of patients in the medical wards. The doctor sees these patients every day. If they were sick in their own homes it is a safe assumption that he would see them only every second day. The question of mass production again comes in, however, and we credit to free medical services $2.00 a visit, assuming a visit every second day, which adds $18,600.00 to the $100,000.00 already set down for dispensary services.

On the surgical side of the house we show 1,400 minor operations at $30.00 and 470 major operations at $100.00. These charges included post-operative care. In addition there were 15,430 days in the surgical wards of those patients who were not operated upon. For these we charge $2.00 a visit, at the rate of one visit every second day. The surgical service then adds $104,430.00 to the total.

In the Maternity Department 600 babies were born in the ward. We have put a flat charge of $50.00 per delivery on these. This covers the delivery charge and after care.

This does not include some special departments, but it has already brought the total up to $253,000.00 of free work given by the physicians and surgeons on our staff for the care of the ward and dispensary services, in one year, in a 360-bed hospital. When these men receive even a part of the amount earned on the very low schedule of charges we have set up, then I feel sure they will be more than glad to charge their wealthy patients as little as could be desired by anyone.

What is the solution of the hospitals' problems? I am not prepared to say. I believe that the private accommodations should be graded down from expensive rooms to rooms sufficiently low so that the people of moderate means can be cared for in a dignified and comfortable way, that the extra charges should be graded in proportion to the expense of the accommodations selected and that the receipts from all private services should be only sufficient to meet the cost. No profit, or very little profit, should be made. I believe that the physicians and surgeons on the staff should be reimbursed, in some measure at least, for the many hours of each week that they spend in the wards and dispensaries of the hospital, and for their lectures to the nurses' training school. Men who, in any other walk of life, have attained a reputation and income that would permit them to take things a little easy, leave their beds night after night at the call of the poor and needy to remain at the hospital part of the night, or if necessary all night, for a difficult maternity case, an emergency operation or a medical consultation. These men cannot be paid in dollars for such services, but is it fair of the community to accept from both the older and younger men in the medical profession, without remuneration, not only such services but daily attendance in the wards and dispensaries? From what source this money, in addition to the huge deficits incurred by the hospitals in the ward and dispensary care of the poor, will come I do not know. Large endowments is one answer; generous gifts each year from the public, through a community chest or otherwise, is another; taxes is a third. I was greatly interested last summer to note that the Province of Quebec has a "hospital tax" imposed on hotel and restaurant meals costing more than $1.00. I do not know how well it works or how much it nets the hospitals there.

My paper thus far should perhaps be called "How Hospital Management Is *Unlike* a Business Undertaking." Fortunately there are many ways in which business methods are being employed and business principles being worked out. A few years ago hospitals were largely managed by committees of the Board. There was a committee which bought the food, another which bought the medical supplies, another which took care of repairs to the buildings; another was responsible to the Board for the medical services, another for the nursing services, and so on, *ad lib.* In almost every hospital I know, where progress has been made and where today's demands are being met, there is now a modern business organization. This recognizes the need of, and provides for, retaining the interest of the community, through its Board of Trustees, its Women's Committees, etc., but it permits no undue influence in the letting of contracts, the purchase of supplies or the admission of patients. It functions along the lines of a modern business set-up.

I have been in hospital work for only six years, and in that time I have seen definite principles established, strengthened and finally recognized generally. Briefly, these are as follows: The Board of Trustees is responsible to the public for everything that is done in the hospital—not alone for the spending of the public's money. They employ a superintendent, administrator, director—call him what you like—who is their representative on the spot, responsible to them for everything that is done in the hospital. He occupies a position similar to a company general manager responsible to the Board of Directors. He is no longer limited to the work of a messenger boy who carries out the detailed instructions (sometimes conflicting) of various committees. He goes to his Board for definitions of policy and for instructions on major problems, and he should be so familiar with the many and varied angles of the hospital's work that he can give honest and fearless advice. He is the head of the hospital organization and all orders to the hospital personnel are given by him. The medical and surgical staff transmits all recommendations to him. These are either acted on by him independently or taken to the Board for decision. He is the liaison officer between the Board, the staff, the nursing department, the social service and all other departments. The control and discipline of the interns are in his hands. They are responsible to the doctor on the case for their professional work, but to the executive of the hospital for their manners, morals and contacts with the public and other departments in the hospital.

Those of you who do not know what the situation in hospitals was ten or fifteen years ago will wonder why I give you these facts. They will seem to you to be self-evident, but a few years ago the ordinary business set-up, bringing the responsibility through the various department heads to one executive who was solely responsible to his Board, was almost unheard of. In a very few hospitals it had been developed largely because of the length of time in office and the personality of the executive, rather than because it was recognized as sound policy. I know of a leading hospital where a few years ago the social service department (which, by the way, is a mighty important branch of hospital work) was administered by a separate committee, and had no responsibility to the executive of the hospital or to any other department. This arrangement worked out to as pretty a cat-and-dog fight as you ever saw. In another large hospital, the sole control of the interns still remains in the hands of a committee of the staff. Complaints of interns' manners, contacts with the patients or their friends, failures to be on duty, etc., naturally are made to the executive. He, however, has no control over the interns; the committee of the staff invariably feel that the interns are being unjustly criticized, and we see a "house divided against itself," to the serious impairment of the hospital's good name. A further result is that it can no longer secure sufficient interns because of its unpopularity with these young men. Fortunately such cases are rare and we find a steadily increasing number of hospitals where the complete control is, under the Board, in the hands of an executive who works in harmony with the public, the women's committees, his Board, and the medical and surgical staff.

In best hospital practice, the same principle of non-interference by the Board in the management of the hospital is carried out in the relationships of department heads to the executive. If the executive is a doctor he knows medical matters (although he probably does not know as much about each of the specialties as do the men who are at the head of medicine, surgery, obstetrics, otolaryngology, etc.) and he certainly does not know much about nursing, dietetics, social service, bookkeeping and so on. If the executive is a layman, he does not assume that he knows as much about medicine or nursing, or special therapy, or dietetics, and all the rest of the highly specialized work of his hospital, as do the people in whose charge these various activities are placed. There is always a directress of nurses who, under the administrator, is in supreme control of the nursing activities of the hospital, including the training school for nurses, and all special nurses who are working in the hospital as employes of private patients. She consults daily with the executive and, of course, the final decision is his, if there is a difference of opinion. There usually is little interference, however, in the administration of her department. The same may be said of the chief dietitian's department, and of the social service department. These are always, so far as I know, under the control of a woman, known as "director." The occupational-therapy department, anesthesia and physiotherapy are three other departments whose heads are directly responsible to the executive. The X-ray department and pathological laboratory are always headed by physicians, in the employ of the hospital, either on a salary basis, or commission, or both. The employes of these departments are secured by the physicians in charge, as is the case in all other departments, with the consent and approval of the executive. The amount of salaries and wages is fixed by him. All of the departments thus far mentioned are professional or semi-professional in nature. They are administered as are the various departments in a large business, except that there is, I believe, less interference by the executive, because of their specialized work. The remaining departments are that of the housekeeper, plant engineer, the laundry. The housekeeper is responsible for the cleanliness of the entire plant, except the spaces actually occupied by patients, where the nursing department is responsible, and the kitchen and auxiliary rooms, where the chef, under the direction of the chief dietitian, is responsible. The housekeeping department does the thorough cleaning in all these spaces and is often asked to help out at other times than general housecleaning. The laundry in some hospitals comes under the housekeeper, and in others, the head laundry man, or woman, is directly responsible to the administrator. Much can be said for and against both arrangements. The plant engineer is in command of the power house, where steam must be kept up every hour of the day, every day of the year, for the sterilizing and other special equipments. He also has charge of the painters, carpenters, electricians and repairmen, and is called upon day or night by everyone in the hospital to do anything and everything that no one else will do.

I have left the accounting department to the last. It, too, has its peculiar difficulties which are not present in just the same way in ordinary business, for the charges which come to it from all over the hospital originate with the professional workers. It is difficult to persuade the operating-room head nurse, who has finished perhaps a ten-hour day supervising three or four or six operating rooms running continuously, with more or less temperamental surgeons to be pleased, and life and death always in the balance, of the great importance of sending the office an accurate account of the operations performed and the room or section from which the patients came, and what kind of anesthesia was used, in order that the proper charges may be made at the close of the day's business. It is also difficult to make the head nurse in the accident ward see the importance of showing clearly, on the charge slips sent to the office, the name of the employer in compensation accident cases, when she has had ten or a dozen accidents per hour to care for. In spite of these difficulties, great progress has been made in recent years in putting business methods into hospital accounting. In most hospitals this department is headed by a department head, sometimes known as comptroller, sometimes as chief accountant or head bookkeeper, who takes from the administrator the details of this work. Several hospitals with which I am acquainted, my own included, have installed a bookkeeping machine which classifies receipts and expenditures into as many items as may be needed and which gives the Board and the administrator the detail on any special item of receipt or expenditure on short notice. Another matter that somewhat complicates hospital accounting is the number of reports which it is necessary to make. In business, a report to the Board of Directors is all that is necessary, but if a hospital receives aid from the State, and aid from the community chest, reports, worked out in great detail, must be furnished both, and in addition the State Board of Medical Education and Licensure, the State Board of Nursing Education, the College of Surgeons, the American Medical Association, the American Hospital Association, and many other organizations, official and unofficial, require the filing of statistical or financial reports at regular intervals. Most of this the chief accountant takes care of. Statistical records are kept in the office of the record librarian, another department head whose work is of great importance.

Last but not least is the assistant superintendent, or assistant director, or assistant administrator, or whatever he may be called. In almost every hospital, the assistant to the executive officer is the purchasing agent, and I take pleasure in saying that I have never seen keener buyers in any business than one will find in this group of men. The variety of supplies which they are called upon to purchase is remarkable: furniture, equipment, medical and surgical supplies, drugs, food, housekeeping supplies and laundry supplies—everything from an operating table to a hot-water bottle, from a case of eggs to the newest thing in maternity instruments is at their finger tips. This gives the assistant superintendent an intimate knowledge of his hospital which he could get in no other way, and well prepares him for the management of a hospital of his own. In addition he cares for a thousand and one things which would otherwise come to the administrator, and in his position of purchasing agent is closer to the control of expenditures than anyone else in the organization.

Both budgeting and cost accounting in hospitals have far to go before they are perfected. Except for a few hospitals, budgets are made out on a yearly basis. They should, of course, be drawn for shorter periods of time and in far greater detail. In order to make the control of expenditures anywhere near perfect, not only salaries but supplies used in each individual section should be charged to that section. By this I mean a single ward or a floor for which one person is responsible. In order to do this, adequate storeroom space must be furnished so that all supplies can be issued from one storeroom under the supervision of the commissary department. You would be surprised to know in how few hospitals provision was made when the buildings were planned for a central storeroom. It is to be hoped that hospital architects in the future will give more attention to the matter of central storerooms conveniently located for the whole plant, and sufficiently large to take care of all the supplies required by the hospital. Such a storeroom would greatly simplify the control of supplies issued and consequently make possible a better budgetary control.

I have tried to give you, in thirty minutes, a composite picture of the modern hospital and of its management. Of necessity I have had to hit the high spots only. You can be better judges than I of how much this picture resembles that of the usual business management. The hospital business has become a very large one. I am told it is the fourth largest in the country. The Committee on the Costs of Medical Care states that "Hospitals in the United States now represent a three-billion-dollar investment; they expend annually about a billion dollars and employ more than one-half million workers." We are doing our best to install modern business methods in this vast undertaking. I make no apologies for myself or my confreres in this undertaking. I know of no group of men and women who give so largely and so willingly of the twenty-four hours of each day they have to live than hospital workers, unless it be the members of the medical profession. There are certain difficulties which all the modern business methods known to man will not solve. There is the natural friction due to a number of professions working together in one workshop—medical men, nurses, dietitians, social workers, X-Ray technicians, laboratory technicians, etc., etc. Although the medical and surgical staff are the most important workers in the hospital, their services are voluntary and gratuitous. Can you imagine carrying on a manufacturing or merchandising business with volunteer workers over whom you have no control except your hold on their loyalty? In almost all hospitals, the loyalty of the staff for its hospital is an outstanding and remarkable thing. Where this loyalty is lacking, however, or in those rare cases where the staff feel that the trustees are trying to put something over on them and are therefore unwilling to give their services in the wards, the dispensaries and the training schools, the situation is hopeless. It would be better for that hospital to close its doors until it can secure a loyal staff.

In addition to these peculiar difficulties, we must face the fact that our "customers" are not normal at the time they are doing business with us. When a man is ill, he is not normal. You will agree that when a member of your family is ill enough to be in a hospital, you yourself are not normal in your reactions to irritations and mistakes. A delay in the nurse's answering a bell, or in an intern's coming when telephoned for, is magnified many times. A mistake in the bill which, if made by a department store, would not even irritate you, assumes tremendous importance in your mind if you are sufficiently worried over the illness of one of your family. These reasons, and the constant shortage of money, justify me, I believe, in stating that hospital management is in many ways different from an ordinary business undertaking. We are doing our best to put modern business methods into effect. You men, whose organization is for the promotion of better management, can help us greatly by your advice and experience. More money is what is most needed, but a better understanding on the part of the public as to our peculiar difficulties and problems would also be of great assistance.

Discussion

Morris Llewellyn Cooke.[2] This is the second time that this matter of hospital management has appeared in the proceedings of the Society. Dr. Huntington of New York gave us a paper about ten years ago. At that time we thought the interest of the Society and the community at large in this subject was sufficient to warrant such a paper. As I see it now, however, I realize that we got started about ten years too soon. We are, I hope, now making our real start in interesting the Taylor Society membership in this subject.

In recent years I have been telling people that if I had a son leaving college, I should recommend two fields to him—either chemical engineering or hospital management. In view of the stupendous capital and operating expenses involved this latter field will provide vocations for a good many high-class men.

The two talks approach the subject from two angles, one from the outside and one from the inside, but each emphasizing the differences between hospital and industrial administration. I know of no two men who have made more distinct contributions to a better understanding of the hospital administrative problem than Mr. Clark and Mr. Rorem.

A good many years ago I was requested by the Carnegie Foundation to prepare a brochure which I called "A Comparison of Academic and Industrial Efficiency." I brought upon myself a good many epithets at that time by comparing the colleges with industry and therefore am a little hesitant about discussing the problem of hospital administration from the same angle.

I have observed the hospital of which Mr. Clark is manager for more than thirty-five years. My father-in-law, Mr. Henry L. Davis, was a director of this institution and about ten years ago I became one. The change that has occurred during those years has not been a change from night to day, because the methods of those days were appropriate to the time, but it has been a radical change. Those early directors devoted not an hour or two a month at directors' meetings, but perhaps an afternoon or two a week in competent service. In the intervening years it has become impossible to manage in that way. At present the men in the community who are best fitted to sit on such boards have other absorbing commitments. Our Board now has an executive committee that meets for a couple of hours twice a month. We consider ourselves responsible to the public but not charged with the details of operation. We are trying to give our managing director as much or more status than the general manager of a business. He has almost the status of the president of a normal enterprise.

The real answer to these problems is constantly obscured by the feeling that a salaried business director cannot "boss" professional men. My answer to that attitude is that we are trying to give our managing director all the authority that his position calls for. This does not mean that either doctors or the scrub women have to take all that a man of less poise than Mr. Clark might be tempted to hand out in his lower moments. Miss Mary Follett, a philosopher and a woman of outstanding competence, delivered a paper before the Taylor Society some years ago on "The Illusion of Final Authority."[3] In the hospital as in industry, authority is no longer centered in one individual.

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[2] Consulting Engineer in Management, Philadelphia, Pa.

Another answer to this attitude is that the *professional* approach to a job is no longer confined to the professions. Money rewards are still very important. But the work itself is constantly assuming more importance among all grades of workers. The director of a hospital can take his place in the ranks of professional men even though he is dependent on a salary rather than on fees. If you have any trouble between doctors and a director with administrative authority the fault lies either in your choice of a director or in the doctors.

I really believe progress toward solving the problems that Mr. Rorem and Mr. Clark have raised will be expedited if the hospital will take on largely the techniques and attitudes of industrial management. I have seen our own hospital reports—daily, monthly and annually—change from jokes to informative, accurate statements that permit helpful comparisons by periods. Hospital budgets must likewise change from mere forecasts which prevent the expenditure of more money than is available to compasses for use in developing better methods and a better balance between different phases of the work.

Perhaps the most important requirement is the introduction of what is called cost finding in industry. Justice Brandeis pointed out some years ago that the electrical industry had everything to gain and nothing to lose by comparing costs. The same is true in the hospital field. A few years ago I wanted to find out what the cost situation in hospitals was and employed a competent management engineer to find out for me. He brought me a huge sheet, issued in New York, which gave the cost per patient day for all hospitals in New York City. From the standpoint of a management engineer the sheet was almost valueless because only whole costs were given, with no explanation of variation. We have to have the details which explain variations in order to compare either two hospitals or two practices in the same hospital. We ought to be able to compare all the side services. Such comparisons will be of assistance to those who are not as good as they might be and will do those who are perfect no harm.

More than forty years ago the Standard Oil Company had the cost of making a gallon of oil broken down into three or four hundred items of cost. Whenever one of their manufacturers had a low cost on any of these items the others were sent to see how he did it. For some years the United States Steel Corporation has been doing a similar thing in their blast furnaces, only they reverse the process. Whenever a man has a high cost the others go in to help him bring it down.

The trouble in the medical field, and I include hospitals, is that we act too much as individuals. The doctor is going to find it to his advantage to do more work in groups and so is the hospital. At present hospitals are taking patients away from each other and doing all sorts of unco-operative things in order to have their beds 70 to 80 per cent filled. I believe 70 per cent occupancy is considered normal and satisfactory for hospitals. But I look forward to the time when 90 per cent of our hospital beds will be filled. This will be brought about, I believe, by community co-operation between hospitals. Plants will not be increased beyond a certain capacity and patients will be guided to the hospitals where there are beds to be filled rather than to those that have to put up beds in hallways.

Homer Wickenden.[4] I think it is very fitting that the Taylor Society should discuss hospital management. When you consider that $50,000,000 a year are spent by the hospitals in New York alone, it is evident that their problems are worthy of study by the most expert engineers.

Mr. Clark has given an excellent picture of how the wheels go 'round inside the hospital. He has convinced me that hospital management is a science, but it is certainly even more of an art. A good hospital administrator must be a good artist.

In his paper and a recent book, "The Public's Investment in Hospitals," Mr. Rorem has made a valuable contribution to our "thinking" in the hospital field. In pointing out the three competing elements in a hospital—the physician, the nurse, and the hospital—Mr. Rorem brings out very clearly some of the difficulties involved in adapting scientific management to hospitals.

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[3] *Bulletin of the Taylor Society*, Vol. XI, No. 5, December, 1926.

[4] General Director, United Hospital Fund of New York, New York, N. Y.

Though I have great respect for his opinions I am not quite convinced of the value of including depreciation and interest on investment in cost figures. They certainly are costs. The hospitals of New York spend $600,000 a year on interest payments on indebtedness. But are these not community costs which should not be borne by the individual patient?

Mr. Rorem believes that the inclusion of these costs will stimulate the hospital superintendent to make greater use of his plant. Perhaps this is true, but factors outside the superintendent's control, such as economic conditions, are very important. I have in mind a maternity hospital which is having a hard struggle this year because there are fewer babies being born in these bad times. The superintendent could surely not be blamed for this. Adding interest and depreciation charges to the cost figures might not help him. Other factors which affect the occupancy of his hospital are the age of his plant, the lack of community planning in providing hospitals, the reputation of the medical staff, and so on.

The superintendent is constantly under pressure from his Board to cut costs. Would he be any more concerned if interest and depreciation charges were added? Or would he not be tempted to cut down the volume of free work? This would be a bad thing for the community.

If interest and depreciation charges are added, why should not taxes be added also? The community has to pay on behalf of the patient the taxes from which the hospital is exempted. Fire and police protection, good pavement and sanitation, surely contribute to the welfare and safety of the patient. I think, however, that Mr. Rorem is right in saying that hospital trustees and superintendents need a larger appreciation of the amount of capital tied up in hospital plant and equipment and its potential usefulness.

In the matter of occupancy, I wonder if the 90 per cent mentioned by Mr. Cooke is desirable? It is not if hospitals are to cope with sudden epidemics, but perhaps these should be cared for in some other way.

Mr. Cooke mentioned the need for greater co-operation in planning hospital facilities. This is a thing which hospital superintendents and trustees as a group can control.

I made a rather rough estimate of the number of hospital beds in the boroughs of New York. In Brooklyn there are about five beds to every thousand people, a maximum provision according to some authorities. I am inclined to think that Brooklyn does not need as many beds as this. In Manhattan, where the population is decreasing, the number of hospital beds is increasing and yet the City has appropriated almost $12,000,000 for additional beds in Manhattan; almost $4,000,000 for the Bronx; almost $4,000,000 for Queens and $2,000,000 for Richmond. There is at present an undersupply of beds in the boroughs of the Bronx, Queens and Richmond, but if all this construction is carried out, hospital administrators will have to scramble around for patients during the next ten years.

Mr. Clark's paper should be read by the business man who complains about hospital costs and says he can get more for his money in a hotel. In fact the general public would profit by reading it. Mr. Clark made an interesting comparison between hotel and hospital costs, but I am wondering if his comparison should not have been made between hotel guests and private-room patients who pay from $7.00 to $10.00 per day, plus extra charges, plus special-nurse fees. I am not so sure that that comparison would then satisfy everybody. That is a matter for further study.

The following questions came to me as I read Mr. Clark's paper:

1. Shall we be able to reduce hospital costs materially?
2. If they are reduced, will the difference be used to reduce the patient's bill or to add new diagnostic and therapeutic services? I have the feeling that the saving will be absorbed in more refined techniques of treatment.

I certainly agree with Mr. Cooke that we need more adequate cost finding. Since I am responsible for the statistical sheet to which he referred I want to say that the United Hospital Fund is certainly not satisfied with it. We realize its shortcomings almost as well as Mr. Cooke, but we believe it is better than nothing.

It does not pretend to be a cost-analysis sheet but it does give hospitals some material for comparing various services. To improve this sheet we have organized a Conference on Hospital Accounting in which about one hundred hospitals are participating. At present we are working on what we think will be a satisfactory means of harmonizing the accounts of the various hospitals, if we can get them to accept it. And we have reason to believe they will be glad to co-operate. After we get the hospitals to the point of using a unified accounting system we believe we can go into the matter of cost analysis with some assurance of results. It may take several years and it is not, of course, for the United Hospital Fund to say that the hospitals must follow any course. They have to help work out the problem and adapt it to their own situations. It is a slow process, but we hope to have something to contribute to the hospital world in a few years.

Since the Taylor Society is devoted to the study of scientific management I have tried to set down the things which these two papers suggest to me as tests of efficiency. They may not be worth much from the engineering viewpoint, but the hospital administrator who could answer affirmatively would have a pretty good institution. They are merely suggestive.

1. Does your hospital budget its income and expenditures and try to stick to the budget? I do not mean that a budget should not be changed, but it should be changed only in accordance with a definite plan.
2. Does your hospital budget its free service? A hospital came to us a few weeks ago for advice because it was running behind. After study of the situation we found they were making no effort to control their free service. We have suggested that this service be budgeted, which of course requires a careful analysis of the costs of that free service. This hospital happens to have those costs and can make its budget.
3. Is there expert control of purchasing and avoidance of waste?
4. Does your hospital have at least a 70 per cent occupancy?
5. Is your hospital properly adapted to the needs of the community as to size and type of service offered?
6. Does the staff personnel function smoothly?
7. Is good credit work combined with social service in making admissions? We find that few hospitals study credit matters scientifically. Many have social-service departments but they should have credit work combined with them in order to determine what the patient is able to pay.
8. Are your medical and surgical standards high? Are you approved by the American College of Surgeons?
9. Are the results of your hospital care satisfactory with reference to mortalities, length of stay of patients, post-operative infections, etc.? Are they commensurate with the amount of technical work, laboratory tests and equipment demanded by the staff doctors?
10. Does your hospital contribute to the prevention of disease in proportion to its opportunity?
11. Does your hospital interpret its responsibility to the community and organize it for adequate financial support?

Perhaps the engineers connected with the Taylor Society can help us work out better hospital efficiency tests.

Dr. Joseph Turner,[5] Chairman. At a meeting which stresses management speakers are tempted to refer to hospital administration as though it were merely a question of finances, budgets and paper plans. While these things are important, they are not all important. The most important thing in hospital administration is not what the patient pays but what he gets, for the most important person in the hospital is not the superintendent or the president of the Board or the head nurse, but the *patient*. Of course, no legitimate source of income should be overlooked, and no economies neglected, but everything that is done must be tested in the light of what the patient gets in his turn.

I hoped that Mr. Rorem would emphasize the importance of including interest charges in calculating costs for service to full-pay patients. In the hospital I know best this is done. From 5 to 6 per cent of the capital investment in that part of the plant devoted to the care of private patients is added to the cost of private-patient care. This income in its turn is utilized for the care of the sick poor. The result is the same as if, instead of investing in facilities for private-patient care, we had put this money into income-producing investments at the usual rate of interest. Mr. Rorem pointed out that hospitals were planned originally for the benefit of the indigent sick, an outgrowth of the universal humanitarian impulse to provide medical care for those who cannot provide it for themselves. Buildings and equipment were provided by the community for this purpose; if now it is used in part for those able to pay, it is only right that these paying patients who are enjoying the benefits of the community's philanthropy should pay for them in a measure sufficient to retain for the poor their benefits in this charity.

Mr. Rorem. There are many things that can be said about the role of fixed charges in hospital costs and the influences they have upon adequate planning and financing.

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[5] Director, The Mount Sinai Hospital, New York, N. Y.

I pushed very few of the points to their logical conclusion, but will go back to two of them since they have been raised. One relates to the practical way in which a calculation of fixed charges can be used by the superintendent or the community. I think they can be used to great advantage in justifying what appears superficially to be a high price for private rooms. Usually if per capita costs without fixed charges are compared with prevailing rates for private rooms they are found to be quite a bit below $8.00 or $10.00. When it is recalled, however, that private rooms have the choice locations in the hospital, or the most valuable sections of the property, that it is anticipated that they will not be occupied to the same degree as the remaining space and that the person who elects to use a private room asks and expects no charity, it seems reasonable to add an allowance for fixed charges to the current out-of-pocket expense in arriving at private-room rates.

I have heard superintendents get themselves into trouble by justifying high prices of private rooms on the ground that the patient was making a contribution to free services. The argument carries no conviction with the patient who is himself faced with medical bills which he considers high.

A second practical way in which a calculation of fixed charges can be used is before rather than after the event of low occupancy. Mr. Wickenden's observations are really in support of my point of view rather than against it for this reason: The worry over fixed charges should be before the hospital is built. They should be considered in preventing certain important community costs rather than in reducing something which is irreducible.

The big hospital problem today is not primarily one of internal efficiency. Just as scientific management worked out the problems of production and then went on to problems of distribution, so the hospital administrators need to turn their attention from internal problems, which can be solved by conventional methods worked out in business enterprise, to an understanding of the place of the hospital in the community. This will result in the planning of hospitals to fill a need rather than to satisfy the vanity of an individual. It may be a minor, but it is nevertheless an important, point that people give too lavishly to hospitals.

Mr. Cooke. Mr. Rorem modestly has not referred to his discussion of the last few months on the significance of the capital cost of hospitals. I have gathered from sitting at his feet that he thinks the range of costs should be from $3,000 to $8,000 a bed.

When I was abroad this summer I heard that an architect friend of mine had been given an order for a large hospital. I gave him these figures and asked him how his hospital would compare. He replied that he thought my figures must be wrong because his hospital was going to cost $9,000. It is that sort of thinking before the event that is, I believe, the chief value of Mr. Rorem's work.

J. A. Hagios.[6] The Policyholders Service Bureau of the Metropolitan Life Insurance Company was asked some time ago by one of its policyholders, a manufacturer who was on a hospital board, to furnish some information on the effectiveness of various collection methods.

We made an investigation and prepared a special report as a result. It is called "Credit and Collection Practices of Hospitals" and can be secured by any of you who are interested by a request directed to the Bureau.

We were in touch with practically all the hospitals in New York and perhaps a dozen others, who have reputedly good systems, throughout the country by means of a questionnaire. It describes the various payment policies in force, such as payment in advance, payment at the end of each week or payment upon leaving the hospital. It also describes methods of collecting balances outstanding at the time the patient leaves the hospital and also methods of co-operation between the credit people and the social-service department. I should be glad to know of any other similar studies of which I have not heard.

Charles Vezin, Jr.[7] As an outsider I have always been curious to know whether there was any possibility of minimizing loss through unused capacity by renting unused rooms during slow times—with the understanding that the occupant would give it up when needed. I have never heard of this being done but believe it might be studied as a means of helping to meet free-service costs. I was thinking of renting to well people, a less expensive service than that given a patient and therefore a possible means of minimizing loss on space that must be maintained whether occupied or not.

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[6] Management Engineer, Policyholders Service Bureau, Metropolitan Life Insurance Company, New York, N. Y.

[7] Litchfield, Conn.

Francis Goodell.[a] In Salem the hospital rents rooms to relatives and friends of patients when beds are available. I do not suppose, however, that any large revenue results.

Mr. Rorem. I should like to toss into the ring a suggestion for utilizing idle capacity, and that is that idle rooms be rented to physicians for private offices. This is rapidly increasing as a hospital practice because it is a logical movement toward the centralization of the medical services of a community in a place where trained personnel, mechanical facilities and capital investment are already gathered together in one location.

Mr. Clark. Perhaps my statement about 70 per cent occupancy should be clarified. A 70 to 75 per cent, the more usual figure in Pennsylvania, occupancy is not a maximum but an average annual figure.

It will shoot to 100 per cent or 90 per cent or even to 110—when beds are put up in hallways, as Mr. Cooke pointed out—but slack periods will bring down the average.

Dr. Turner. The hospital census is usually taken at midnight when there is no flux in hospital population. It rises during the morning and drops away toward night. While one may show a 75 per cent occupancy at midnight, by noon of the next day there may be a very high percentage occupancy, or one may even be turning patients away for lack of room.

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[a] Associate Secretary, Taylor Society, New York, N. Y.

NECROLOGY

Mrs. Florence Kelley

September 12, 1859 **February 17, 1932**

General Secretary, National Consumers' League
New York

The Taylor Society and the forces of industrial progress everywhere mourn the loss of Mrs. Florence Kelley after a long illness following a life devoted to humanizing conditions in industry.

Her career of service began in her college days at Cornell, when she organized the Social Science Club of Ithaca and wrote her thesis on "The Law and the Child." The courage and determination which she was to show all through her life were also evidenced in her work for a law degree at Zurich. In those days it was not possible for a woman to secure that degree in this country.

When she returned to this country she first practiced law in Chicago, then acted as social investigator for the United States Department of Labor, was later appointed the first woman Chief Inspector of Factories in Illinois, and finally, in 1899, came to New York as secretary to the National Consumers' League.

For more than forty years she worked for progressive labor legislation and the relief of population congestion, in this city and state and throughout the country. She was a formulator of laws and a fighter for them. Though she became a Taylor Society member only in recent years, her influence there was characteristic and strong. She was an active member of the committee that drew up the Industrial Employment Code for the Society, and many of us will long carry a last memory of her as an active participant in the discussion and interpretation of this document at the Spring Meeting in Philadelphia. Those who saw her there will appreciate what John Haynes Holmes has said of her:

"Her face and figure bore all the scars of a lifetime of heroic battle for the weak, downtrodden and oppressed."

Index to Volume XVI

The index to Volume XVI has been printed for binding with that volume of the BULLETIN. A copy of the table of contents and title page will be mailed to any member or subscriber on request.

A Taylor Society Anniversary[1]

The Taylor Society Twenty Years Ago

By ROBERT T. KENT
Vice-President, Divine Brothers Company, Utica

THIS IS the Taylor Society. It is named after the founder of the movement which has revolutionized American industry. If the Society bore the name of the man who founded it it would be called the Gilbreth Society, for this Society was conceived in the brain of Frank Gilbreth. It was due to his energy, his perseverance and his organizing ability that it came into being as the group that we know today.

Let us turn back the pages of history to 1909 and 1910. Scientific management was not making very great progress. It was meeting active opposition from the labor unions. It was meeting opposition in the home of its friends, the American Society of Mechanical Engineers. In fact, you might say it was being worse than opposed, for in many cases it was being ignored. Then came a movement that apparently had no relation to scientific management. The railroads petitioned for an increase in freight rates. The Eastern Shippers Association opposed them. The Eastern Shippers Association engaged the man who is now United States Supreme Court Justice Louis D. Brandeis to present their side of the case before the Interstate Commerce Commission. Brandeis knew something about the workings of scientific management. He advanced the thesis that if the railroads would manage their business properly they would have no need for the increased rates but would save $1,000,000 a day.

Brandeis sought the advice of some of the leaders in scientific management, and one day in the fall of 1910 a small group was gathered together in the apartment of our good friend, Henry L. Gantt, in New York, to discuss how best to present to the Interstate Commerce Commission the facts of scientific management and their application to the railroads.

As a result of that conference Mr. Gilbreth and your speaker were sent to the Angus Shops of the Canadian Pacific Railroad to investigate there the work Gantt had done, which had proved remarkably successful.

Finishing the inspection at the Angus Shops, we took the boat that night for Three Rivers, Quebec, where Mr. Gilbreth had a job under construction. The boat arrived at Three Rivers at two-thirty in the morning, so we figured it was not worth while to take a stateroom. We sat up; we smoked; we talked. We discussed what we had seen that day in Montreal, how Brandeis would present it to the railroads, and the influence that such a presentation would have on the propaganda for scientific management. We recognized that it would be front-page stuff in the newspapers. Three hundred million dollars a year sounded like the national debt.

Suddenly Gilbreth said, "This thing is going to put scientific management on the map. There must be some organization to conserve the ground that will be won. There must be some outfit that will perpetuate Fred Taylor's work. Let us form a society to do it."

"Fine, but how shall we go about it?"

He said, "Morris Cooke is in Boston. I am going to telegraph him to meet us."

We landed at Three Rivers, the telegram was dispatched and the engagement was made. Cooke was met in Boston, and the plans were laid. A few days later five men met at the New York Athletic Club and laid the foundation of the Society that we now have. Those five men were our friend Cooke, Frank Gilbreth, your speaker, Wilfred Lewis, and the new President of the American Society of Mechanical Engineers, Conrad N. Lauer. Let me read you an excerpt from the minutes of that first meeting:

"Mr. Gilbreth spoke at length on the necessity for such a society to perpetuate the work begun by Frederick W. Taylor, to promulgate the principles laid down by him, to gather, codify and preserve all data on the subject of scientific management, to act as a clearing house for ideas, to secure the co-operation of all men capable of undertaking the work of scientific management, either in a responsible or subordinate capacity, in order that there would be available at all times for the members a cohesive working force familiar with the principles, and in sympathy with the ideas, of scientific management. Mr. Gilbreth further said that it was essential that there should be some central body which should be an authority on all questions of management, and one to which any person or corporation could turn for advice on any perplexing question relating to management. Such a society would be in a position to act as an expert to the government in the reorganization of any governmental department or bureau, such as the proposed reorganization of the post office. Such a society would unify the methods of investigating systems of management, and all correlated questions. It would prevent useless and wasteful duplication of effort on the part of investigators, and would prevent the direction of investigations along incorrect lines, due to an imperfect understanding of all the considerations involved. Such a society would, by being the natural custodian, preserve the records and work of its members, which records, now in the hands of widely scattered individuals are in danger of becoming lost to the world. The science of management would be able to advance much faster than it is now doing, if it were backed by a dignified society formed of men of unquestioned ability, and the backing of such a society would give its members a standing that would be impossible of achievement by means of individual effort. Such a society would give publicity to the science of management which could not be hoped for were it to depend on the efforts of those interested acting singly."

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[1] Addresses presented before the Twentieth Anniversary Dinner of the Taylor Society, New York, December 3, 1931.

The five men there grouped together got in touch with others—men like our friend Kendall, James M. Dodge, Charles Day, William Lyall, Henry R. Towne, those who had plants that were operating under the Taylor System, and those who were operating in those plants.

The result was what has come to be known as the Keen's Chop House Dinners. Once a month a group of from thirty to forty men—some of them traveled from Boston; some from even greater distance—would meet around the dinner table and discuss questions of management. These were not long, drawn-out, dragged-out discussions. Our friend Barth was there—good old Barth, with his rough exterior that concealed as kind a heart as ever beat! Woe betide the man who expressed an opinion that deviated a hair's breadth from the truth as Barth saw it! Barth would get up and say, "You don't know a damned thing about it. Now I will give you hell"—and he would!

Jimmie Dodge was there, our first president—wise, witty Jimmie Dodge, who held the Society on an even keel, put us through the troublous days, and prepared us to take advantage of the front-page publicity when Brandeis sprung on the railroads the $300,000,000 a year!

Those were troublous days, but they were happy days. We would meet together. One member would bring up a problem that was perplexing him, and all hands would turn to in its solution. We began to gather data together, to collect time studies and to follow out the scheme that was laid down in these minutes that I read to you.

And then—but let me go back. The Society was formed partly because in the American Society of Mechanical Engineers, of which we were all members, loyal members, they would not give to the Taylor principles the publicity that we thought they deserved. We were very rigid in our requirements for membership. We were a club, a fraternity, as it were, and election to that select group of, as Mr. Dodge said, "those that God loved" had to be by unanimous vote. It was really a society of distinction. It was a mark of honor to be invited to the Keen's Chop House dinners. So jealous were we of our standing that nobody would be admitted unless he could at least qualify for membership in the American Society of Mechanical Engineers. To avoid offending that august body that we hoped to educate—and we did—we elected as our first president of this body a past president of their society, Mr. Dodge.

Then it became apparent, after Mr. Brandeis had proved to the world that scientific management was something worth while, that we should enlarge the Society, and in 1911, twenty years ago, the formal organization was effected. From then on you know its history. It is recorded in the minutes and in the printed BULLETIN.

Let me give you an idea of what scientific management meant in those days a quarter of a century ago. Mr. Dodge expressed it better than any words of mine could do. He said, "This is not a movement; it is a religion." And let me tell you, my friends, that no group of crusaders ever battled for their cause with greater energy, greater faith, than the men in this movement in those early days battled for scientific management. You younger men have no conception of the sacrifices that the older men have made—of time, of money, of energy, some of health, and some have even laid down their lives.

Mr. Dodge said, "Taylor in this movement is comparable to the Almighty. There are a few apostles, Gantt and Barth and some others. There are a number of disciples, such as myself, and you, and you, and you. The rest are all members of the church." That was the spirit that actuated us.

I shall now try to button up this rambling discourse into a concrete thought or two that you may take home and think about. I will fling you a challenge: Is the Society today living up to the ideals that were set by that group of men, many of whom have gone on, as embodied in these early minutes, "to promulgate the principles laid down by Mr. Taylor, to gather, codify and preserve all data on the subject of scientific management, to act as a clearing house for ideas, to secure the co-operation of all men capable of undertaking the work of scientific management?"

If you answer that question in the negative, then let me ask you another: Is the work you are doing or the plans you are following better than the plans that were laid down then?

That is a question for you men who have picked up the work where the older men laid it down to answer. I do not presume to answer for you. But let me say this: Twenty years ago no one of that little group of twenty or thirty men who met at Keen's Chop House had any idea that scientific management would reach the point that it has reached today. The best we hoped for was that perhaps in fifty years, perhaps in the lifetime of some of the youngest of us, the principles might begin to find ready acceptance. Not one of us dreamed that in less than a quarter of a century the principles of scientific management would be so woven into the fabric of our industrial life that they would be accepted as a commonplace, that plants would be operating under the principles of scientific management without knowing it, plants perhaps that had never heard of Taylor.

When a movement reaches that phase the time for propaganda is passed. It is a time for action.

Now let me tell one more incident from our good friend, Barth, and then I am through. At one of the meetings in the old Keen's Chop House days there was a discussion going on. We finally arrived at a conclusion and decided that something should be written, and the question arose as to who should write it. Barth, who had been silent all that time, suddenly jumped up and said, "While you fellows are writing about it, and talking about it, I am doing it." And Barth was right. The man who does things is the man who gets farther and accomplishes more than the man who talks about them.

The Development of the Policy of the Taylor Society

By H. S. PERSON

Managing Director of the Taylor Society, New York

IT HAS been my point of view that the policy of the Taylor Society had been determined, years before the organization of the Society, by the activities of Mr. Taylor, even though he himself had nothing to do with its organization and rarely participated in its activities. When Frank Gilbreth made the momentous suggestion just brought to our attention by Bob Kent—"There must be some outfit that will perpetuate Fred Taylor's work"—he implied much more than perhaps he at the time realized. "Fred Taylor's work" meant doing what Taylor himself was doing; further development and refinement of the technique; analysis and reformulation of principles in the light of later experience; and not least, bringing the full force of scientific management to bear on the solution of problems which are ever disturbing industry and are making the conditions of livelihood, for which alone industry exists, more and more difficult. Fred Taylor was as much concerned about any one of these aspects of scientific management as about the others.

It will be worth our while briefly to recall the career of that great man from the point of view of what his work meant to him. Back in the eighties when the management movement first made its impact on him, and in the nineties when he first made his impact on it, his primary interest was technique. His problem then was to explain to fellow engineer-executives the practical aspects of what later came to be called scientific management, and to convince them of its great value in the management of shops. Even then, however, although his emphasis was on technique, he did not overlook its spiritual and social values, for in "A Piece Rate System" and "Shop Management" he talked about high wages, sympathetic understanding between management and workers, and their significance for industrial prosperity. By 1900 the social aspects of scientific management had come to occupy so large a place in his interest that he decided he could no longer afford to work for money. From then on he devoted time and much of his means—and with Mrs. Taylor's co-operation much of his home and home life—to promotion of scientific management as a constructive social force. This particular emphasis increased during the latter years of his life. He never neglected the technical aspects; in fact, at the time of his death he had planned and was financing a great research which should make basic production standards available to all industry. Mr. Kent was, I believe, one of those participating in this research. But his public addresses were more and more concerned with the flexibility and broad applicability of scientific management as a technique, and with scientific management as a social force.

Therefore, when I suggest that specifications of the continuing policy of the Taylor Society had been written on the records even before the Society was organized, I refer to this record of Frederick Taylor's interests and activities, and imply that the Society assumed the task of seizing the torch which fell from his hands and carrying on without loss of momentum, or diminution of purpose.

The emphasis at any particular moment in the work of the Society has been determined chiefly by the nature of the industrial problem of the moment. It has always, of course, been an emphasis on basic technique; always an emphasis on philosophy and principles; but also, at any moment, an emphasis on technique, philosophy and principles in terms of the dominant problems of the moment. A little thought will make it evident that the application of scientific management to merchandising can be explained only in terms of previously developed production technique; to general administration only in terms of previously developed production and sales technique; and to collective management of industry only in terms of all the technique of private industry. This explanation may be verified by examination of a file of our BULLETINS, consecutive since 1914, which is the record not only of the work of the Taylor Society but also of progress toward enlightened and effective management in American industry.

There have been five distinguishable aspects of dominant interest and emphasis in the work of the Society. Before the War American industry was on a sellers' market and the emphasis in the work of the Society was on production technique, and the principles as expressed therein, for on a sellers' market production to meet what appears to be insatiable demand is the major problem of industry. It was during this period and in the production field of management that the basic technique of scientific management was worked out and the fundamental principles formulated.

At the same time, however, what is identified as the personnel problem or the problem of industrial relations was coming more and more to engage industrial attention. The Society accordingly increased its effort to bring to the public knowledge of the significance of scientific management as a substantial basis for sound industrial relations. In the BULLETIN may be found the record of a noteworthy, pioneering, progressive attitude toward this aspect of the management problem. For pioneer articles on workers' consent, workers' participation, the functional co-operative status of workers in management, and so on, consult the BULLETIN from 1915 on.

One aftermath of the War was our plunge into a buyers' market. On this buyers' market two other phases of management came to the fore as critical problems of management; one the problem of merchandising and the other that of general administration. The Taylor Society promptly assumed the responsibility of interpreting and expounding scientific management in its applications to merchandising and general administration.

As one evidence of this foresight and promptness we earned a gold star in the form of this quotation from the report on sales management of the President's Committee on Recent Economic Changes: "A widespread interest in marketing methods cannot be said to have come with the turn of prices (in 1920), although at that time there was plenty of talk about the difficulty of getting sales. As early as October, 1920, however, articles suggesting a more scientific viewpoint on marketing appeared in the Taylor Society BULLETIN." With respect to general administration the prompt action of the Society was evidenced by its expositions of flexible budgeting even before management literature generally had got around to any noteworthy attention to more elementary and less effective forms of budgeting.

With the development of merchandising research, more intensive sales methods, and general administrative control during the past decade, the costs of indirect labor, the problem of office organization and management came to be a matter of increasing concern. Worthy representatives of scientific-management engineering gave their attention to this particular problem and have recorded noteworthy constructive achievements.

We are able to observe in this record of Taylor Society activities a widening and ascending spiral of influence of scientific management: at the workplace, in the shop, in the factory, in industrial relations, merchandising, general administration and office management. There is, however, more to the story.

In the report of the President's Committee on Recent Economic Changes, published in the summer of 1929, it was declared that the outstanding economic problem of the United States was the maintenance of economic balance. It may be the Committee sensed the blow that was to come a few months later. The Taylor Society responded by making economic balance a major subject of consideration at its December meeting of that year. Every program since then has penetrated more deeply into this problem of balance, of stabilization—for two reasons. First, what is the use of developing refinements of economy in production, merchandising and general administrative management of the individual plant if these are to be neutralized by an unstable environment? Scientific management not only seeks to establish stability, but its greatest gains come when it is surrounded by stability. Second, if stabilization is the outstanding industrial problem, then scientific management has an especial responsibility, for whatever stabilization is achieved in industry as a whole will be achieved in one way and one way only—by application of the adapted technique of scientific management to industry collectively. As our good French friend and fellow-member, M. de Freminville, has said, scientific management means the establishment of a reign of law, a government, in the individual enterprise. Stabilization of industry generally means a reign of law, a government for collective industry. It is our responsibility to bring to this problem of industrial stabilization all of the great contribution that scientific management has to offer. It is a responsibility that cannot be evaded. Evasion of such responsibilities means atrophy and eventually death; acceptance of them means strength and growth.

This extension of our interest, this assumption of ever greater responsibilities, means harder work for the small staff in our central office; for when it assumes a new responsibility it does not relinquish others already assumed. The earlier interests merge into and become part of any new, larger interest.

Scientific management in the individual plant demands scientific management in the environment; that is one reason why scientific-management plants have been so generous to students and visitors! But also a scientific management of the environment, of collective industry, demands scientific management in its constituent parts—in every plant and in every unit of every plant. Therefore, our interest must be maintained all along the line. And we should realize, as a guarantee of that, that scientific management in any sector of the line can be developed and maintained only by constant reference to all other sectors.

I am confident that if Frederick Taylor were living today he would be putting all his energy into this problem of general stabilization, for it was he who said, "The rights of the people (consumers generally) are greater than those of either employer or employe. I desire the greatest possible benefit to the people who work and consume, and I regard dividends only as an incident . . . under the existing industrial system a condition precedent to the continuance of the plant." Otherwise his career would not retain its consistency. It is doing that very thing, along with many other things we do, that enables us to express the objective specified by Frank Gilbreth when he said, "There must be some outfit that will perpetuate Fred Taylor's work."

A Foreign Guest's Appraisal

By **HANS MARS**

Head of the Management Section, National Labor Council, Vienna, Austria

I ESTEEM it a great privilege to be called upon to address an audience like this. Being a European and intimately connected with the labor movement of Central Europe, I suppose you will naturally want to hear from me what attitude European countries, Central Europe in particular and the labor movement in these countries, take toward scientific management today.

I should like first to speak simply as a European. We Europeans think that we are in the midst of what we call an American epoch of history. This epoch began when the United States entered the War and thereby decided its result. Ever since 1917 we have felt every year the leadership of the United States in the history of Europe. I only need to mention the Dawes Plan, the Young Plan, the Kellogg Pact and other political achievements. I only need to point now to the great financial help which the United States has given, especially to Germany, to prevent a breakdown about three years ago. Today Europe is expecting a revival of trade in the United States in order that she may herself survive and overcome the present depression.

One of the greatest contributions of America to Europe lies in the field of management, if we understand by management planned human activity for the purpose of achieving a predetermined goal.

To any European the utter disregard of the United States for technical and organizational tradition, and that strong, determined will to organize, develop and regulate progress are important features. A European who has come to this country as recently as I—only a few weeks ago—is impressed by this spirit every minute of his stay. It is quite natural and plausible it seems to me that a country animated by this spirit should have been the one to develop scientific management.

You will be surprised to learn from me that the idea of scientific management is fairly well developed in Europe. Although you would not find in Europe, comparatively speaking, as many well-managed factories as you find here, there are factories with 5, 10, 15, 20 and more per cent of scientific management. And you would also find that in 90 per cent of all the cases the people concerned are not conscious of it, and still less that they are applying American methods.

This state of affairs is due, in my opinion, to one particular feature of your own scientific-management movement. Whenever I, who am to a certain extent capable of understanding English, read one of your articles or books, I find that in almost every line of your writings you take the particular social and economic structures which are prevalent in this country for granted. It is for this reason that we Europeans find it difficult to appreciate your writings. It happens, therefore, that your work has to be interpreted by our people into our own language, and the fact that the ideas have been derived from this country is lost.

If you would allow me to suggest something, I should say you would find more appreciation for the excellent work you have done in the past if you were to draw a very clear distinction between those findings which are of a permanent and a universal value and those findings of only temporary and local value. If I read, for instance, any book on time study which some of you have published, I find on almost every page sentences which can be understood only if one knows the American background, and unfortunately not all Europeans who wish to stay and to work in Europe, are able to come to this country. If you would in the future very carefully distinguish those facts which are only applicable to your own environment from the more permanent and universal facts, you would find that Europe would be more appreciative of the work which you are doing here than has been the case in the past.

In the second place, English-speaking countries have used the term "scientific management" in a way that no European, apart from the English, would understand. With you, as far as I can make out, everything is scientific that is rational rather than emotional, planned rather than casual, experimental rather than theoretical; but we have a much narrower interpretation. We should never allow the *engineer* in a plant to make fatigue studies or to use a "fatigue curve" and say that it was "scientific." We would perhaps allow him to use it, but with the understanding that it was a rule-of-thumb thing and not scientific. When I mentioned to a brilliant physiologist in my country that you use some "fatigue curves" he simply smiled and said, "If I, who have never seen a skyscraper, who know nothing about steel construction, were to construct a skyscraper, you would certainly think I was incompetent." A person without real physiological and psychological training is not capable of solving physiological and psychological problems. Yet a great many of your scientific-management people who have accomplished in the engineering field what we Europeans have admired, venture to give an answer to physiological and psychological problems. If you would take into account the different attitude of Europeans in this particular respect you would again find that we would be more able than hitherto to appreciate your work.

I have spoken so far as a European, and I should like, if you would allow me, to say a few words as a labor representative. This August there was an international conference in Amsterdam, at which your Industrial Employment Code was discussed by a group of people. I must say that I read your Code with intense pleasure, and it is only since I have read it that I have been able to understand how you dare to say that you scientific-management people in America are capable of solving not only your technical and organizational, but also your social problems, in your own factories. I now see that you understand the totality of the situation, and that you are no longer viewing problems of scientific management from a one-sided, non-social point of view.

I have since then had the opportunity, largely through the courtesy of Dr. Person, to see more of the recent work which members of the Society have done, and I have been still more impressed with that courageous development of social thinking within your own ranks. I am sure that some of your people will say that your Code goes too far; I am sure others (I should belong to them) will say it does not go far enough. However, the important thing is that a Society with a primarily engineering point of view, which is neither an intrinsically anti-social nor an intrinsically pro-social point of view, should feel itself compelled, in order to do a hundred per cent job, to take account of the prevalent social forces and thought of the time. Because of that attitude I think your Society will have a much greater future than it would otherwise have. But I suggest that you should adopt a perfectly neutral attitude in this matter. You have developed and given to the world, it seems to me, as a most valuable contribution, a certain mental attitude toward certain economic problems, especially within factories, and lately have stepped into a much larger area. This mental attitude is that at the bottom you like to base your actions upon exact facts. But it is impossible, it seems to me, in the field of social problems to have exact facts. You will find that the facts upon which social actions are based are largely facts of an emotional nature, of an instinctive nature, of an irrational nature. A Society like yours, with a fundamentally scientific attitude, should only go into these matters with a neutral attitude. A neutral attitude would consist in taking the diverse and even contradictory facts as granted without identifying yourself as a Society with some of them or their consequences. If you do this, you will find, as was the case in Austria with a similar body of men and women, that labor will be glad to co-operate.

A last idea, and I shall finish. Your activity is primarily a rational activity. You want to have exact facts, and to base a rational activity upon these exact facts. Now, you should never lose sight of the fact that all your rational activity is serving two irrational purposes: on the one hand, to give satisfaction to consumers, by producing high-quality products at a very low cost, and on the other, to give happiness to those who produce these things. In other words, industry properly conceived should have at least two products; namely, material goods, such as shoes, clothing, etc., and immaterial values like satisfaction to the consumer and happiness to the producing employes.

In your Code I found that you had already realized the importance of achieving these two results for society and the producers in your plant. If you continue this policy in the future you will find at the twenty-fifth, or the fiftieth or one-hundredth, anniversary that a still larger body of men and women will admire the work that has been performed.

Reviews

Successful Living in This Machine Age. By Edward A. Filene, Simon and Schuster, New York, 1931, pages x, 274.

"There has been so much bunk and balderdash written about the impossibility of the human spirit's keeping alive in a machine age that this book comes like a clean and antiseptic air through a stuffy room." Every reader, as he peruses the book, must appreciate this introduction of Glenn Frank. "Men are everywhere blaming the machine order for sins that lie rather at the door of the economic order."

Mr. Filene shows us a machine order whose sins could all be virtues. The greed for profit produces low-cost manufacture and a pricing which permits the multitude to buy. The demand for an apparently inordinate wage forces high production and results in larger purchasing power. The search for wealth results in greater comfort and satisfaction for the masses. But the working out of these seeming paradoxes, he shows, depends upon scientific thinking and scientific action in the substitution of fact for opinion and tradition. Lacking these we have, as at the present time, inordinate capital accumulated which defeats its own purpose. We find profits invested in questionable securities instead of in products which make life more enjoyable.

While in his sweep through all social and economic phases of our civilization the author exceeds, perhaps at times, like every prophet, a strictly logical sequence, most of his basic views are well grounded and his conclusions the result of keen analysis. He brings out also in a clear, readable fashion a multitude of economic truths of direct application to present-day living.

It is evident as one notes the emphasis throughout the work upon scientific management, which he defines, in Taylor's own words, as the "substitution of fact for opinion," that the fundamental principles laid down by Frederick W. Taylor have been the source of his inspiration and education in much of this analysis.

Like Filene's earlier work, stress is laid throughout on "mass production" but instead of employing this in the ordinary sense of large-scale production, to which is often ascribed so many a woe, he defines mass production as "production for the masses."

With all the recent tirades against "overproduction" and the superficial treatises on "technological unemployment," it is refreshing to read the prophecy that "for decades to come there should be work enough for everybody under the most scientific management, to provide things for the masses which the masses eagerly want, but which only a small percentage of the masses as yet enjoy."

Many, especially those who confuse mass production as defined by the author, with unscientific large-scale production which overlooks consumption possibilities, will criticize the book as advocating a panacea for all ills. A casual reading, which might indicate that mass production *per se* would have prevented our present depression, must, however, be supplemented by a thoughtful examination of the masterly chapter on "Credit" and the later one on "Mechanism," which bring out in logical fashion the part played in our business fluctuation by unscientific management of finance and credit.

In the common view of profit and pricing the fact is overlooked, Mr. Filene brings out, that the amount of money in any society "depends not upon how many certificates called dollars are in existence, but upon how efficiently these dollars are serving human needs." This in turn depends not only "upon how advanced the machinery of production and distribution is, but it depends equally upon whether the money is being distributed so that those who need things are able to buy. Under the old system business sought to sell to those who happened to have dollars. Under the new system, business seeks to supply human needs and to see, therefore, that all would-be consumers are adequately supplied with dollars."

Credit and finance, in Mr. Filene's opinion, have not kept pace with science in business. The traditions of banking, he says, were developed in the process of transforming an agricultural civilization into a machine civilization. Those traditions must be discarded only because the machine civilization has now been created.

In the old days "we could not have factories unless we could raise capital and we raised the necessary capital through putting our money in the banks. The banks then loaned it to business men who used this money to buy machinery and to pay wages." Bankers then were eminently sensible when they advocated thrift.

"But presently one of the strangest events of human history happened. . . . By this financing of production and discovery of more efficient methods, industry was perfected to such a point that it was necessary for the masses to spend their money freely and unlearn their previous habits of thrift." The masses now needed credit as the producers had needed it earlier. But the bankers did not understand the capitalism of the new day and did not respond. The conservative financier induced the masses to stop instalment buying and invest their savings in stocks. So instead of putting two hundred dollars into an electric refrigerator, they became two-hundred-dollar capitalists.

When millions bought stocks instead of goods, two things happened. First, the orgy of speculation bottled up the buying power of the masses. Second, manufacturers having plenty of money, expanded, but sales did not expand in proportion. In many cases they shrank, profits shrank, and employes were being laid off, even before the crash in the stock market.

Now the author does not claim that saving is not wise. It is not only wise but necessary. But he points out that "these times demand credit for the masses as surely as the times ever demanded credit for business enterprise."

Following this treatment of credit, which is one of the most striking chapters of the book, the author turns to an analysis of unemployment. He says, "The cure for unemployment does not lie in sharing the work which we are now doing, but in organizing the production and distribution of more wealth."

There are two ways, the author says, in which this can be done. In the first place there is the organization of new industries such as the automobile industry with its employment, direct and indirect, of several millions of men and women. "Technological unemployment," the freeing of men from other industries, provides the opportunity for new development. The automobile would have been impossible without the man power thus provided.

But when we survey the field of man's wants, we do not have to wait to organize new industries. "There are limitless opportunities in the reorganization of familiar industries so that they will supply the wants of the masses instead of catering to relatively few."

Then follow the views of the author on unemployment insurance, balancing the alternative of industry versus state insurance. "The ideal solution," he says, "would be for the business leaders of America to get together and publicly accept the responsibility for unemployment . . . Business can succeed only as it creates success for everybody."

Mr. Filene calls the period in which we are now living the Second Industrial Revolution which he defines as "the dawn of industrial consciousness." Business is discovering that it pays to give service and that it pays best to give the greatest possible service to the greatest possible number. Applying this same principle Filene contends that world peace no longer is a far-off dream but a logical destiny. No individual and no group can be independent of others, we must go in with all our heart for mutual service.

The influence of scientific development with the consequent higher standards of living are discussed in subsequent chapters with relation to politics, to education, to health, to religion, to beauty and to the effect upon the family.

Finally the author treats of the excesses and perils of mass production. Mass production brings its peculiar evils by emphasizing our industrial ills when they do occur. It has placed great reservoirs of capital under control of those "who do not yet know how to use it for the production of more wealth."

But none of these things suggests or implies that we should go back to the old order; they emphasize the need of the further extension of the principles of scientific management, the substitution of fact for opinion, as fundamental elements of our entire business world.

SANFORD E. THOMPSON[1]

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Consumer Engineering. By Roy Sheldon and Egmont Arens, Harper & Brothers, New York and London, 1932, pages vii, 259.

Precisely what is "consumer engineering"? After a careful reading of this informative and well-written book, I confess that I am still puzzled. Mr. Ernest Elmo Calkins, whose name commands respect, contributes an introduction in which he gives us a two-pronged definition: "Briefly it is shaping a product to fit more exactly consumers' needs or tastes, but in its widest sense it includes *any plan which stimulates the consumption of goods.*" The words I have italicized appear to provide a key to the author's conception. But this leaves out of the reckoning the underlying economic factors which in the end control consumption. It centers attention on devices for inducing consumers to spend more money, regardless of consequences. If this be "engineering," then that much-abused word no longer implies painstaking analysis of *all* pertinent data for the purpose of assuring structural soundness.

Lack of definition seems to your reviewer a fundamental fault of the book. It leads to loose statements and inconsistencies. We read in Chapter III, to cite only one example, an impassioned plea for the promotion of "obsolescence" of consumption goods—in plain language throwing them away while they are still quite usable; in the same chapter we find a recommended "abandonment of high-pressure methods." Perhaps the authors have discovered some other means of persuading customers to exchange good dollars for the transitory pleasure of having something new to show their friends; but if so, their formula is not published in this book.

For the most part, the authors are actually concerned not with the economics of consumption in relation to production, but with methods, ideas, stunts for pushing sales; with market research, suggestions from modern psychology, designing, packaging, and getting distribution. Out of twelve chapters, seven are directly devoted to these topics. Here the authors are evidently treading on familiar ground. They are dealing in facts and specific proposals—including a full description of the kind of passenger train that would attract travelers and an interesting plan for disposing of our wheat surplus through advertising. This material is meaty and stimulating.

Yet even in these chapters a candid reviewer can scarcely fail to remark on what will seem to many readers a shallow and outdated approach to problems of present-day marketing. All the phrases and modes of thinking of the new era—underconsumption, prosperity from high wages, beauty in the home, mass buying, and the rest—parade before us. Those dear, dead days of 1929 almost live once more. The existence of some vaguely unpleasant thing known as a depression is hinted at once or twice; but obviously it is only a disturbance slightly retarding Expansion of Purchasing Power.

One trouble with this prescription is that we gave it a thorough trial from 1922 to 1929. We had a grand booze party while it lasted, but the next morning's nausea has left most of us unenthusiastic over swallowing more of the same. It seems to me that the least one might expect from "consumer engineering" would be a new cocktail of more appetizing flavor.

William H. Lough[2]

Wage Methods and Selling Costs. By Anne Bezanson and Miriam Hussey, University of Pennsylvania Press, Philadelphia, 1930, pages xxi, 405.

This volume is the result of a study, undertaken at the request of the National Retail Dry Goods Association, of the effectiveness of the various methods of wage payment in use in retail selling. The problem which was put to the investigators was to determine whether, and to what extent, any particular system of compensation was identified with low selling costs and therefore with efficient store operation. This was a task of no mean proportions but one which the investigators have proved by this volume they were well equipped to undertake.

For the purposes of the study, Miss Bezanson and Miss Hussey collected detailed records of individual earnings and sales for one year in the Hosiery, Ready-to-wear, Men's Clothing, and Housefurnishings departments in a selected group of stores, and the major portion of the volume deals with the findings of the study of these departments. The relationship between method of wage payment, earnings, sales, and selling cost, is considered from all possible angles—length of service, length of working day, basic salary, average sales-check, and number of transactions.

No one who has read and studied this report of wage methods can fail to be impressed by the thoroughly scientific and scholarly approach to the problem manifested in the organization and analysis of the statistical data which form the first three-quarters of the volume. But the business executive is most impressed by the soundness of the conclusions drawn from the material at hand. The chief conclusion, encouraging and discouraging at the same time, is that not method but administration is the key to low selling cost.

In other words, no executive responsible for selling cost may hope to escape any share of his responsibility by finding a sure-cure in any one system of compensation. In the last analysis, intelligence must be applied to this, as to all problems, and also knowledge of the factors influencing a rise in salary expense. The real answer to the question, "How can we secure low costs for the organization and insure adequate earnings for the employe," lies in one word: "Opportunity." No employe, no matter how capable a salesclerk, can sell more than the number of customers who present themselves.

The service which the authors have performed for retail stores is to make available to individual store executives a method of testing results in their own departments and comparing them with those included in the study, and to provide these executives with a technique for continuing further researches along the same lines. Progressive stores, willing to experiment and to appraise their efforts honestly, have already reached conclusions through their own experience, similar to those set down by the authors. But all executives will find in this volume much material for thought and for enabling them to test their solitary efforts toward efficiency and economical operation. To this end the tables of earnings, costs, sales, wage payment systems, etc., included in the appendix are a great help.

To Miss Bezanson and Miss Hussey, retail-store exec-

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